

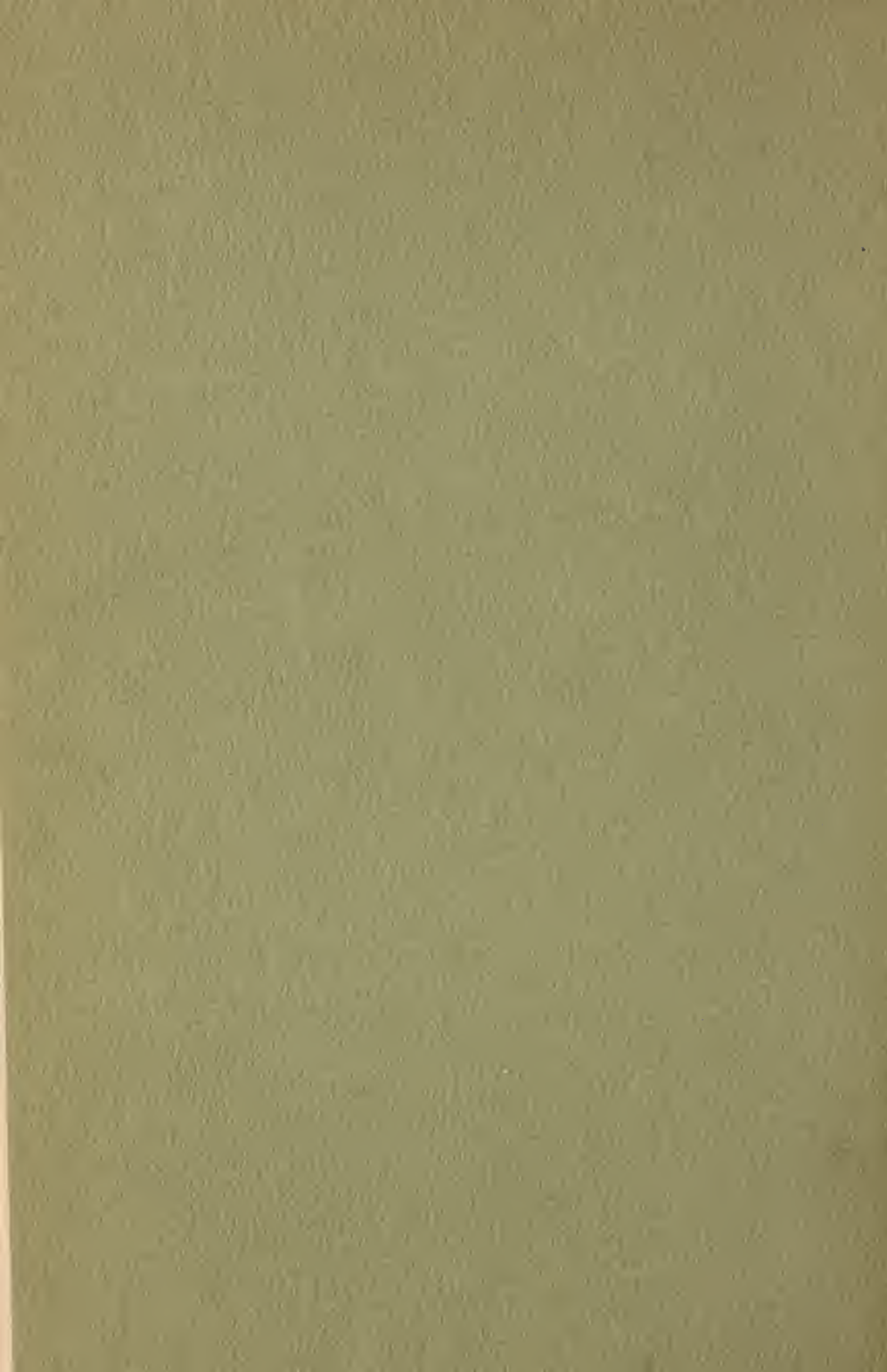
NEW YORK
ZOOLOGICAL SOCIETY

1895



1949

FIFTY - FOURTH
ANNUAL REPORT
FOR THE YEAR 1949



THE NEW YORK ZOOLOGICAL SOCIETY



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NEW YORK
ZOOLOGICAL SOCIETY



FIFTY-FOURTH
ANNUAL REPORT
FOR THE YEAR 1949

30 East 40th Street, New York 16, N. Y.

THE ZOOLOGICAL PARK

Bronx Park, New York 60, N. Y.

MEMBERSHIP IN THE NEW YORK ZOOLOGICAL SOCIETY

THE NEW YORK ZOOLOGICAL SOCIETY was founded in 1895 for the "instruction and recreation of the people" through the establishment of a Zoological Park, for the promotion of zoology through exhibition of collections, publication, research and exploration, and for the conservation of animal life of the world. Since 1899 the Zoological Society has directed the New York Zoological Park and in 1902 it was entrusted with the management of the New York Aquarium.

Membership is actively invited of all persons who are interested in the objects of the Society and desire to contribute toward its support.

Annual Membership is \$10. Contributing Membership is \$25. These Memberships entitle the holders to Member's cards and 10 guest tickets of admission to the Zoological Park on pay days; a copy of the Annual Report; a subscription to ANIMAL KINGDOM, the bi-monthly publication of the Society; privileges of the Library and Members' Lounge in the Administration Building and to attend all open meetings of the Society. Tickets to all sections of the Zoological Park for which an admission charge is made are available, free, to Members upon application at the Administration Building in person. Members will be taken on "behind the scenes" tours of the Zoological Park and Aquarium, without charge, on application, and are entitled to 20% discount on all publications of the Society. We are advised that Contributing Membership fees are deductible from income tax within the legal limits.

Annual or Contributing Members may become Life Members by the payment of \$200. See By-Laws. Other classes of membership are: Patron, \$1,000; Associate Founder, \$2,500; Founder, \$5,000; Founder in Perpetuity, \$10,000; Benefactor, \$25,000.

Applications for membership may be submitted to any officer of the Society or to the Society's general office at 30 East 40th Street, New York 16, N. Y.

FORM OF BEQUEST

*I do hereby give and bequeath to the "New York Zoological Society," of the City of New York*_____

REPORT OF THE PRESIDENT

FOR A VARIETY OF REASONS this year will go down as one of the most significant in the history of our institution. One development or event has followed fast upon the heels of another.

In the early spring New York State made an initial appropriation of \$275,000 for the construction of a Conservation Exhibit in the Zoological Park. This novel installation, including a demonstration building, will be located on 12 acres of land at the northeast corner of the Park. Here lessons of Conservation will be brought home to city dwellers and great hope is held for the widespread values that this new exhibit may provide. In addition to its own direct services to the public of New York, it may well prove a pilot project leading to the establishment of similar exhibits in other cities throughout the country.

The creation of this Conservation Exhibit is an end result of more than five years of effort and planning involving enactment of an agreement with the Society by the State Legislature. Throughout its development this project has enjoyed the vigorous support of Commissioner Moses, culminating in executive action by Governor Dewey whereby the above-mentioned appropriation was made. We are extraordinarily appreciative of this interest and support on the part of both the State and City governments.

Another appropriation was also made early in the year, namely one by the City government in the sum of \$225,000 representing one-half the cost of a new exhibit building for anthropoid apes, the Society providing an equivalent amount from its General Fund. This new Great Apes House will have barless outdoor areas in which will be seen Gorillas, Orang-utans, Chimpanzees and Gibbons. The showing of all the anthropoid apes without bars has not heretofore been attempted on any such scale in other zoos. While experimental, we believe it will prove successful and it should represent a very great advance in methods of exhibiting these remarkable animals.

Further, a new Penguin House is being constructed with funds provided by the Society in the amount of \$65,000 from the Park Improvement Fund. Here, again, new methods are being adopted

which will result in visibility of the birds both above and below water. This building and the Great Apes House will be opened to the public next spring.

As a consequence of these three actions a large stride forward has been taken in the further modernization of the Zoo, resulting in greater building activity than at any time since the early years of the century when the basic construction program was being carried out.

To continue the epitome of the year's events, the late spring witnessed the successful return of the Belgian Congo expedition that brought an extraordinary collection of rarities, among them the Congo Peacock, a young Mountain Gorilla, an Okapi, Aardvarks, Pangolins and a number of smaller though no less rare and interesting mammals and birds.

In the autumn the Zoo celebrated its Fiftieth Anniversary, ending the year with a total, since the opening day in 1899, of more than 107 million visitors — a number, to be noted, equal to a quarter of the total population of the earth only four lifetimes ago, or to the total population of the United States in 1920, or to thirteen times the present population of Greater New York!

At the year's end arrangements were completed for a permanent home for the Tropical Research Department on the island of Trinidad, accomplished largely through the persistence as well as the generosity of Dr. William Beebe who completed in October his fiftieth year as a staff officer of our institution.

Proposed New Aquarium

During the year details of plans and specifications for the new Aquarium were completed. An agreement with the City as to an appropriation that may be made by it toward the construction costs has not yet been arrived at but hopes are entertained that this understanding may be reached in the near future. As and when this occurs our institution will launch its campaign for the raising of its share of the required funds. The cost of this great building, with its supplementary exhibit areas, is estimated at approximately six million dollars. It is not possible to define in words the beauty and compelling character of the designs for this new Aquarium — a greatly needed addition to the recreational and educational facilities of our City.

Finances

Another year has been completed wherein operating and administrative expenses have been within income received from endowment and from membership dues. This result was only made possible through careful control of general costs and limitation of such activities as education and scientific research, for which, it may be pointed out, there is great need for additional funds. On the other hand, appropriations of considerable size were made from capital funds in order to provide the Society's share of the cost of the Great Apes House, for the development of the Jackson Hole project, the Tropical Research station and other purposes, so that the over-all financial position of our institution has been diminished. Obviously, it will not be possible to continue appropriations of this magnitude from capital account over any period of time without unduly and inadvisably impairing our financial position. Consequently, members and friends should be aware that continuing progress and development will have to depend in the main upon the receipt of new funds in the form of contributions or legacies.

Trustees

It is gratifying to report the election to the Board of Trustees of Mr. Archibald B. Roosevelt and Mr. George F. Baker, Jr. Mr. Robert Gordon McKay has withdrawn from the Board because of continued absence from the city, and his resignation has been accepted with much regret.

Research and Education

In the realms of research and education, the year's record has also been a gratifying one. In addition to the excellent news regarding a home for the Tropical Research Department in Trinidad, the Society, in a totally different environment, has been sponsoring and developing biological field studies, including those pertaining to wildlife protection, at its station in Jackson Hole, Wyoming, now in its third year of operation. In the Zoological Park we have continued grants-in-aid to graduate students working on animal behavior. The development of this work gives added endorsement, if such is needed, to the fact that specific contributions to a better understanding of human psychology are derived from the study of

animal behavior. Work is also being continued at the Park in parasitology, in neurophysiological studies of the electric eel and in cooperative work in various fields of pathology between the animal hospital laboratory and medical research institutions in New York City and elsewhere. The work on the genetics of melanomas, or black cancers, in fishes, with its distinct potentiality of values for the solution of human cancer problems, is constantly receiving wider recognition. We are extremely appreciative of the American Museum of Natural History's helpfulness in making available excellent laboratory facilities for this work.

In education, both within the Zoological Park itself and in the school system and colleges, a far greater amount of effective work could unquestionably be accomplished if more substantial funds were available. Nevertheless, even with limited resources, the Department of Education has gained very worthwhile results. A new teachers' training program has been initiated — its immediate popularity among teachers proving so great that our facilities are incapable of taking care of the large number of applicants. Among other things a steady growth has been recorded in the distribution of educational films, as well as in services to organized school groups. In general, however, the demand for literature, films and other educational material is far greater than our available financial resources can provide.

Conservation

From many sources it has been learned that the destruction of wild animal life in Alaska is proceeding in alarming proportions. We are taking steps to inform ourselves directly and in as much detail as possible so that, in due course, we may be in a position to use influence in correcting a situation that gives every evidence of being increasingly critical. We are also gathering information concerning measures that could be adopted for the better protection of the North Atlantic seal herds. Present reports indicate that the Hooded Seal is seriously threatened; further, that better control methods in regard to the hunting of the Harp Seal could be attained through international agreement. In addition, the Society has made grants-in-aid to field biologists who are engaged in studies of the relationship between Coyote and Mule Deer populations in the Jackson Hole area, in acquiring additional information concerning the

migrations of the Yellowstone Elk herd and on the ecological effects of raptor predation.

On August 27, the Society was host in the Zoological Park to 250 representatives of more than 25 nations attending the United Nations Scientific Conference on the Conservation and Utilization of Resources as well as the International Meeting for the Protection of Nature at Lake Success.

A significant development has taken place in the establishment of the Conservation Foundation, which has been sponsored and financially aided by the Society. A copy of the Annual Report of the Foundation will be mailed to any member of the Society who requests it and consequently no further reference need be made here to the promising growth of this new enterprise.

* * *

It has indeed been an eventful and creative year, auguring well for the work and development of our institution as we enter the second half of the century.

THE ZOOLOGICAL PARK

JOHN TEE-VAN, *Executive Secretary*

DURING 1949, the Zoological Park's 50th year of operation, 2,503,397 visitors entered the gates for a grand total since the opening date in November, 1899, of 107,004,983. The annual total is 1.55% above the average for the last ten years, although slightly less than the previous year's attendance. The "polio" scare, which occurred during months when we expect large crowds, materially reduced the number of visitors.

In keeping with the Society's long-time practice of working closely with the educational facilities of the community, a fifteen-week course of lectures and demonstrations was instituted at the Zoological Park on September 20 for teachers of the City school system on the subject of "How to Use the Facilities of the Zoo." Forty-five teachers, principally from schools near the Zoo, are taking the course which has proved to be exceptionally popular and which was heavily over-subscribed. Arrangements have been made for the continuation of the course in the spring for other groups of teachers.

The Zoological Park Council — the elected representatives of employees meeting with staff officers — continues to operate as a forum where the problems of the Park's employees are discussed freely; many worthwhile accomplishments have stemmed from these meetings. Most important, during the present year, were the changes instituted on January 1, 1949, in the Pension Plan to provide increased pensions, pensioning before the age of 65 at prorated reduced pensions, and entrance into the Fund, under certain conditions, for employees who entered the Park's service after 45 years and before 55 years of age. An extensive analysis of the job classifications of the Society's employees with proposed pay-plans and increment scales was developed and completed during the year, under the guidance and supervision of Mr. Harry T. Marsh.

The Park's Safety Committee, an offshoot of the Council, has established a firm place in the Park's operation. As a result of its

observations and deliberations, the Zoological Park won second place in 1948 and first place in 1949 in its category in the annual state-wide Accident Reduction Contest of the State Insurance Fund.

The publication in the early part of the year by the Sears Foundation of Yale University of the first volume of the *FISHES OF THE WESTERN NORTH ATLANTIC* — a 576-page quarto book comprehensively treating the hags, lampreys, lancelets and sharks of our coasts, and edited by an Editorial Board with John Tee-Van, Executive Secretary of the New York Zoological Park, as Editor-in-Chief — brings to completion the first of a series of volumes which ultimately will illustrate, describe and discuss all of the marine and brackish water fishes found on our side of the North Atlantic. The authors of the first volume are Dr. Henry B. Bigelow and Dr. William C. Schroeder of the Museum of Comparative Zoology at Harvard and Dr. Isabel Perez Farfante of the University of Havana.

THE ANIMAL DEPARTMENTS

MAMMALS AND BIRDS

LEE S. CRANDALL, *General Curator*

ROBERT M. MCCLUNG, *Assistant, Mammals and Birds*

GRACE DAVALL, *Assistant to the General Curator*

AUGUST SCHILLING, *Head Keeper of Mammals*

GEORGE SCOTT, *Head Keeper of Birds*

DURING 1949 the activities of the established importers of wild animals, following the trend of the preceding year, became almost entirely quiescent. With the exception of actual war years, our expenditures for dealer's stock probably were never so small. It seems likely that high costs in foreign ports, the expense and risks of transportation and increasing restrictions of various sorts, will not soon be eased to a point where extensive commercial importations can be resumed. Because of the seriousness of the situation, we feel that we are most fortunate in having secured the services of our collector, Charles Cordier, who, since 1941, has brought us so many rarities, including numerous "firsts."

Accompanied by Mrs. Cordier in the role of indispensable assistant, Mr. Cordier arrived with his Belgian Congo collection on June 15, 1949. Through the good offices of Mr. Laurance S. Rockefeller, direct air transport by Sabena was arranged. The entire shipment arrived in excellent condition, and was on view for Members' Day, June 23.

After a period of rest, the Cordiers left for Ecuador on October 2. Headquarters were established in Quito, in preparation for the reception of Umbrella Birds and other Cotingas, Hummingbirds and the rare Woolly Tapir, which it is hoped Mr. Cordier will be able to collect. Return in mid-May, 1950, is anticipated.

MAMMALS • Outstanding event in this Department was the arrival of the Cordier shipment from the Belgian Congo on June 15. A complete listing of the mammals received appeared in *ANIMAL KINGDOM* for July-August, 1949. The collection included 80 specimens of 35

forms, 30 of which were entirely new to us. Of particular interest were a young female Mountain Gorilla, a male Okapi, Pangolins of three species, seven Colobus Monkeys, three Congo Aardvarks, nineteen Duiker Antelopes of six kinds and seven Water Chevrotains or Mouse Deer.

Specimens received by purchase, gift or exchange totalled only 24, as compared to 43 during 1948. Most important among the nineteen arrivals through purchase were a young male Sable Antelope from the St. Louis Zoological Park, two Solenodons from Santo Domingo and a Yapock, air-shipped from Costa Rica. The latter animal, second of its species to be kept in captivity, is thriving in the Nursery Room in the Lion House. In addition, six male Lion cubs, now living together, have been installed in the Plains Lion House, to be developed as future inhabitants of Lion Island. A seventh Lion cub, an unusually promising youngster reared in the Cleveland Zoological Gardens from jungle-bred parents, was placed in the Lion House, where it is hoped that he will eventually prove a worthy successor to the aging Bruno.

Second only to the arrivals in the Congo shipment, births in the collection have again provided a large share of our accessions, numbering a total of 98. On December 31, 1949, 79 individuals of 34 forms were still living, as follows: 1 Bennett's Wallaby, 1 Agile Wallaby, 1 Rhesus Monkey, 1 Gray-cheeked Mangabey, 1 Slow Loris, 1 Golden Marmoset, 6 Patagonian Cavies, 3 Raccoons, 1 California Sea Lion, 1 Guanaco, 2 Axis Deer, 1 Père David's Deer, 1 Indian Sambar Deer, 6 Sika Deer, 1 Dybowski's Deer, 5 White-tailed Deer, 3 Red Deer, 2 Fallow Deer, 2 Barasingha Deer, 1 Formosan Deer, 6 Elk, 6 Reeves' Muntjacs, 1 Chinese Water Deer, 2 Nyalas, 1 White-eared Kob, 2 White-tailed Gnus, 1 Addax, 6 Blackbuck, 1 Chestnut Duiker, 1 Mouflon, 4 Aoudads, 5 Himalayan Tahr, and 1 Gayal.

The birth of most interest, of course, was that of the Père David's Deer, the first of its species to be born in the New World. The Slow Loris, a hybrid between the Common (*Nycticebus c. coucang*) and the Gray (*N. coucang cinereus*), establishes a new birth record for us.

A young Moose born on June 3, which we had great hopes of rearing, disappointed us by dying on August 15. We have yet to record a success in rearing this difficult animal.

A tragedy occurred on July 31 when a young White-handed Gibbon, born in June of the preceding year, fell from Gibbon Island

into the shallow waters of Lake Agassiz and drowned. His frantic but water-wary parents tried hard to draw him to safety but were unable to do so.

Cecil and Penelope, our two Platypuses, passed their third summer in their exhibition Platypusary without incident and were viewed by 51,479 visitors. At the close of the year, these rarest and most delicate of mammals were thriving in winter quarters in the basement of the Large Bird House.

An outbreak of disease in the Rome Zoo having decimated the hoofed stock of that institution, a gift of five animals was flown to Rome, as a gesture of friendship. The group consisted of a Gayal, an Addax, a Nyala and two Guanacos, all reared in our collection.

During 1949, in addition to surplus mammals disposed of in exchange, 46 were sold, mostly to other institutions, for a total of \$5,625.

CENSUS OF MAMMALS

December 31, 1949

<i>Orders</i>		<i>Species</i>	<i>Specimens</i>
Monotremata	Platypus and Echidnas.....	2	4
Marsupialia	Kangaroos, Opossums, etc.....	13	25
Insectivora	Moles, Shrews, Hedgehogs, etc.....	3	4
Chiroptera	Bats	1	1
Primates	Apes, Baboons, Monkeys, Lemurs, etc....	38	75
Edentata	Armadillos, Sloths and Anteaters.....	2	2
Tubulidentata	Aardvarks	1	2
Rodentia	Squirrels, Marmots, Beavers, etc.....	24	46
Carnivora	Cats, Dogs, Bears, etc.....	28	68
Pinnipedia	Sea Lions, Walruses, Seals.....	1	8
Proboscidea	Elephants	2	6
Hyracoidea	Hyraxes	2	2
Perissodactyla	Rhinoceroses, Horses, Tapirs.....	8	13
Artiodactyla	Hippopotamuses, Camels, Deer, Cattle, etc.	61	287
	Totals	186	543

Summary: Orders, 14; Species 186; Specimens 543

BIRDS • The birds received in the Congo collection were of great importance, numbering 107, a total greater than those received from all other sources during the year. Thirty-eight forms were included, of which 35 were new to us. Most striking were seven Congo Peacocks, first of their kind to have been kept in captivity outside their native land. Hardly less impressive were the Black Guinea fowl, Hartlaub's Ducks and Cameroon Finfoot, all "world firsts." Seventeen Sunbirds of six kinds made an exhibit of unsurpassable beauty. Charles Cordier's fame as a collector, already well established, rose

to new heights in overcoming the serious obstacles that beset the Congo Expedition and bringing it to a most successful conclusion.

Arrivals from other sources numbered 105, of which 43 were by purchase, 58 by gift and four in exchange. Among the 212 arrivals from all sources, the following 38 forms new to the collection were represented:

Rock-hopper Penguin — *Eudyptes crestatus crestatus*
Rock Cormorant — *Phalacrocorax magellanicus*
King Cormorant — *Phalacrocorax albiventer albiventer*
Nile Hadada Ibis — *Hagedashia hagedash nilotica*
Hartlaub's Duck — *Pteronetta hartlaubii hartlaubii*
Ituri Red-chested Goshawk — *Accipiter toussenelii canescens*
Bates's Serpent Eagle — *Dryotriorchis spectabilis batesi*
Schubotz's Francolin — *Francolinus lathamii schubotzi*
Congo Peacock — *Afropavo congensis*
Black Guinea fowl — *Phasidus niger*
Uele Crested Guinea fowl — *Guttera plumifera schubotzi*
Schouteden's Crested Guinea fowl — *Guttera edouardi schoutedeni*
Whiteside's Wood Rail — *Himantornis haematopus whitesidei*
Uganda Red-chested Rail — *Sarothrura rufa elizabethae*
Cameroon Finfoot — *Podica senegalensis camerunensis*
Piping Plover — *Charadrius melodus*
Loango Fruit Pigeon — *Treron calva calva*
West African Red-billed Dove — *Turtur afer kilimensis*
Emin's Black-billed Touraco — *Turacus schuttii emini*
Senegal Coucal — *Centropus senegalensis senegalensis*
West African Wood Owl — *Strix woodfordii nuchalis*
Kivu Striated Coly — *Colius striatus kiwuiensis*
Black-headed Trogon — *Trogon citreolus melanocephala*
Malayan Wreath-billed Hornbill — *Ryticeros undulatus*
Chapin's Barbet — *Tricholaema hirsutum chapini*
Gray-throated Barbet — *Gymnobucco bonapartei bonapartei*
Uganda Green-tailed Bulbul — *Bleda eximia ugandae*
Congo Red-backed Scrub-robin — *Erythropygia leucophrys ruficauda*
Doherty's Bush Shrike — *Telophorus dohertyi*
Hartlaub's Chestnut-winged Glossy Starling — *Onychognathus fulgidus hartlaubi*
Bronze Sunbird — *Nectarinia kilimensis kilimensis*
Ruanda Double-collared Sunbird — *Cinnyris afer graueri*
Uganda Buff-breasted Sunbird — *Cinnyris venustus igniventris*
Regal Sunbird — *Cinnyris regius*
Kivu Blue-headed Sunbird — *Cyanomitra alinae vulcanorum*
Olive Sunbird — *Cyanomitra olivacea ragazzii*
Vieillot's Black Weaver — *Ploceus nigerrimus*
Black-necked Weaver — *Ploceus nigricollis nigricollis*

On November 8, two Greater Birds of Paradise were purchased in London from the veteran collector Mr. W. J. C. Frost. Thanks to air shipment the birds arrived in perfect condition and within a few

days of arrival were displaying their golden plumes in our once famous "Paradise Row."

A pair of Andean Condors, greatest of flying land birds, came by air from South America in April. These superb creatures were welcome replacements of a species we dislike to be without.

A Golden-headed Quetzal, rare and lovely representative of the short-trained forms of this gorgeous group, was purchased in July. Our single previous specimen appears to have been the first to have been seen in collections.

"Old Shep," our well-known Kea, which died on July 18 after having established a world's longevity record of nearly 29 years with us, was almost immediately replaced by a young and active specimen which happened to have been designated as surplus by the Zoological Society of San Diego. Keas are not easily come by and the coincidence was a most fortunate one.

Seven stately young European Spoonbills were received in exchange from the Zoological Garden of Amsterdam on September 7. These birds had been collected by special permission in Holland's "Zwanenwater" and carefully hand-reared for us.

A pair of young Regent Birds, handsome members of the family of Bower Birds, came to us in exchange for a pair of surplus monkeys, and two rare Siberian Red-breasted Geese were received from Denmark in exchange for ten of our Alligators that had outgrown their quarters.

Our two King Penguins, with a Gentoo and a Rock-hopper, passed their second summer in the "cooler" without incident. It is planned to transfer them directly from their outdoor winter quarters to the new Penguin House early in the coming spring.

Six hybrid Blackfoot x Humboldt Penguins, hatched in the autumn of 1949, were almost completely feathered at the close of the year. Our well established breeding colony of these birds is expected to furnish a considerable surplus for use in the Penguin House.

CENSUS OF BIRDS

December 31, 1949

<i>Orders</i>		<i>Species</i>	<i>Specimens</i>
Struthioniformes	Ostriches	1	1
Rheiformes	Rheas	1	1
Casuariiformes	Cassowaries and Emus.....	2	3
Tinamiformes	Tinamous	1	1
Sphenisciformes	Penguins	6	23
Pelecaniformes	Pelicans, Cormorants, etc.....	8	18
Ciconiiformes	Hérons, Ibises, Storks, Flamingos, etc...	27	63
Anseriformes	Swans, Ducks, Geese and Screamers...	65	454
Falconiformes	Vultures, Hawks and Eagles.....	22	26
Galliformes	Quail, Pheasants, etc.....	46	118
Gruiformes	Hemipodes, Cranes, Trumpeters, Rails, etc.	28	65
Charadriiformes	Plovers, Sandpipers, Gulls, etc.....	21	52
Columbiformes	Pigeons, Doves and Sand-grouse.....	38	68
Psittaciformes	Parrots, etc.	22	35
Cuculiformes	Touracos and Cuckoos.....	5	7
Strigiformes	Owls	9	12
Apodiformes	Hummingbirds	4	5
Coliiformes	Colies	1	6
Trogoniformes	Trogons and Quetzals.....	2	3
Coraciiformes	Kingfishers, Hornbills, etc.....	11	14
Piciformes	Barbets, Toucans and Woodpeckers...	16	22
Passeriformes	Perching Birds	198	366
	Totals	534	1,363

Summary: Orders, 22; Species, 534; Specimens, 1,363

REPTILES AND INSECTS

BRAYTON EDDY, *Curator*

FRED TAGGART, *Head Keeper*

FOR THE THIRD TIME since its opening fifty years ago, the Reptile House was closed to the public for an extended period. On the first two occasions extensive repairs were made to the roof and a terrazzo floor was laid. This year, during most of September and October, the doors were kept shut because of nearby blasting for the Great Apes House. Only on Sundays was the public admitted. No surer way could have been found to determine the unyielding popularity of this venerable building, since there was a constant clamor during this period by park visitors anxious to see both reptiles and insects.

REPTILES • Although receipt of specimens was necessarily curtailed while blasting operations were in progress, a well-rounded exhibit was maintained. The explosions seemed not to disturb the reptiles unduly, except for the male alligators which on occasion were aroused to bellow like rival suitors in Springtime. But this was Fall! Whether the noise of successive discharges or repeated vibrations, or both, were responsible for the outbursts is as yet undetermined.

By air this year we received 17 shipments totalling 117 amphibians and reptiles from Australia, Austria, Belgian Congo, Colombia, Costa Rica, England, Philippine Islands, Switzerland and Utah. Of this number only 44 were purchased, the remainder being exchanges or gifts. Outstanding among purchases were the Rhinoceros Iguana, Scarlet Poison Frog, King Cobra, Blue-sided Ameiva, Mangrove Snake, White-throated Monitor, Brown-tailed Tree Snake, Banded Krait, Striped Jungle Runner, Double-crested Basilisk, Black-and-yellow Cobra, and a pair of Japanese Giant Salamanders. The latter was obtained from Joseph Sloan of Salt Lake City Zoo.

From the Cordier Expedition to the Belgian Congo we received 2 bizarre Rhinoceros Vipers, 1 Velvet Snake, 1 African Monitor, 3 Black-necked Agama Lizards and 2 Notched Hinge-backed Tortoises.

Exchanges with foreign correspondents yielded a gratifying assortment of amphibians and reptiles. Of particular interest was a group comprising 4 races of Wall Lizards, a Taurican Lizard, Aesculapian Snake, Three-toed Sand Lizard and Caspian Terrapin from Erich Sochurek, Austria; a Great House Gecko, European Whip Snake, Asp Viper, Eyed and Green Lizards from P. Maeder, Switzerland; a Boomslang, Night Viper, African Toad and African Sharp-nosed Tree Snake from the Zoological Society of London. Dr. med. Br. Popp of Germany sent us a welcome addition to our herpetological library in the form of 9 volumes on European and Asiatic Snakes by Fritz Steinheil; and Dr. Robert Mertens contributed several books of his authorship. Ten adult alligators were shipped to C. H. Krag of Denmark in exchange for 2 Siberian Red-breasted Geese sent our Bird Department.

By exchange with the National Zoological Park, District of Columbia; Washington Park Zoo, Oregon; Barrett Park Zoo, Staten Island; Philadelphia Zoological Gardens and Pittsburgh Zoological Gardens, Pennsylvania, we received 25 specimens of 9 species. Worthy of special note are the Cunningham's Skink and Bearded Lizard of Australia, the Yellow Atelopus Frog and Ornate Horned Frog of Brazil. Several southeastern snakes and a particularly colorful Gila Monster came as an exchange from Brad Bradford of the National Sportsmen's Show.

Gifts totalling 267 specimens were received from 160 persons. Especially welcomed was an African Egg-eating Snake from Joseph Foldes and a Green Tree Snake from Joseph Criscuolo, fruit dealer in New Jersey. Gifts from us include a 7-foot alligator to the Roger Williams Park Zoo, Rhode Island, and 8 native turtles to Dr. Elisio Ferreira de Sousa of Porto, Portugal.

Eleven reptiles received this year have not previously appeared on our records: LeSueur's Water Lizard (*Physignathus lesueurii*), White-throated Monitor (*Varanus exanthematicus albigularis*), Blue-sided Ameiva Lizard (*Ameiva bifrontata divisa*), Lilford's Lizard (*Lacerta muralis lilfordi*), Bedriaga's Lizard (*Lacerta muralis bedriagae*), Moorish Wall Gecko (*Tarentola m. mauretanica*), Yellow-lined Skink (*Eumeces schneideri*), Striped Jungle Runner (*Cnemidophorus l. lemniscatus*), Blue-green Tree Snake (*Passerita preocularis*), Black-and-yellow Cobra (*Naja naja samarensis*), Yellow-banded Tree Snake (*Boiga dendrophila latifasciata*), and Yellow Atelopus Frog (*Atelopus flavescens*).

Important deaths include a Japanese Giant Salamander, possibly of copper poisoning; a 9-foot King Cobra, of long-standing tuberculosis; and a 307 lb. Galapagos Tortoise, of intestinal stoppage by chunks of carrot. All carrots are now ground before being fed.

For the third successive year Curator Eddy was granted the hospitality of a hunt club in South Carolina to secure reptiles for display and exchange purposes. The field trip lasted 2 weeks, February 27 to March 12, during which period 23 snakes of 8 species and 7 lizards of 3 species were captured. Unusually cold weather prevailed, keeping most of the specimens in or near concealment. An Eastern Garter Snake captured was unique in having checkerboard markings instead of the customary stripes. An Eastern Diamond Rattlesnake, Corn Snake and Chain King Snake — killed because injured in a brush fire — had no food in their digestive tracts; but another Diamond Rattlesnake, an Eastern Ribbon Snake and a Chain King Snake were taken in the act of swallowing a Marsh Rabbit, a Cricket Frog and a Southern Ribbon Snake respectively.

In order to determine the relative safety against rattlesnake bite of two types of field boots, one a high-laced leather army boot and the other a calf-high rubber boot, they were lined with brown paper, filled with sand and swung in the direction of a freshly-caught, 4-foot Eastern Diamond Rattlesnake. The rattler struck and in each case its fangs penetrated the boot and deposited venom on the inside of the brown paper lining.

Surprisingly enough, in view of the population density of the Bronx, wildlife not only persists but can hold its own for size. An Eastern Milk Snake picked up by Keeper Taggart on Boston Post Road had a measured length of 44½ inches, just three-quarters of an inch short of the record; and an American Bullfrog, found in a pond near the Administration Building, had reached the maximum size for this species of 8 inches from nose to crotch.

Improvements

The former Parasol Ant exhibit case in the main hall of the Reptile House has had its walls painted and sanded yellow, its copper base painted a waterproof blue, for an attractive display of Ornate Horned Frogs and Japanese Salamanders. A false floor added to the Anaconda Cage has provided a shift area for the King Cobra. Minor repairs have been effected and dioramic landscapes retouched.

Public Service

A continual flow of requested information has gone out by letter and telephone to educational institutions, commercial concerns, radio stations, newspaper and magazine services, and to the general public — whose appetite for scientific knowledge seems insatiable. Fifty-two labels were written, bulletin board material prepared, and copy furnished Jack Layer for pictures he took in the Reptile House that subsequently appeared in the *New York Journal-American*. A checklist of snakes of Trinidad was drawn up for the Department of Tropical Research.

Curator Eddy served on the American Committee for International Protection of Wildlife and was one of three judges chosen to select the winning plan for a proposed Children's Zoo at Roger Williams Park, Rhode Island. He led members of the New York Biology Teachers' Association on a herpetological field walk at Poundridge Reservation; assisted NBC in obtaining motion pictures of rattlesnakes for television; gave aid to the Animal Behavior Research Fellows in dominance, color vision and bellowing tests made on our Giant Tortoises and Alligators.

Scientific meetings of UNSCCUR at Lake Success and AAAS in New York City were attended. The National Zoological Park, Philadelphia Zoological Gardens and Salt Lake City Zoo were visited.

Six illustrated lectures were given before: the Tropical Medicine graduate students of Bellevue Hospital, Forum Club of St. Bartholomew Church, Cub Pack No. 11 in New Rochelle and two In-service Teachers' Classes at the park. On five occasions Curator Eddy was one of a Panel Forum which provided entertainment for disabled veterans at government hospitals. Miss Angela Ragonese, Secretary to the Curator, appeared on a Fordham University radio program and spoke before an assembly of students at Walton High School, explaining her diversified duties at the park.

Box turtles were loaned to the American Museum of Natural History for behavior studies; a Wood Turtle was given to Eva Mendelwitch, teacher of Goteborg, Sweden; and Dr. Harry A. Schwarz was the recipient of several dead turtles for testing the efficiency of a heart pump he recently invented. It was thought that the pump might be adapted for use on other animals, including man.

Five hundred and twenty-one reptiles and amphibians were acquired this year by purchase, gift, exchange or collection.

CENSUS OF REPTILES AND AMPHIBIANS

December 31, 1949

<i>Orders</i>		<i>Species</i>		<i>Specimens</i>	
		1948	1949	1948	1949
Caudata	Salamanders	1	3	5	8
Salientia	Frogs, Toads	8	8	30	23
Loricata	Alligators, Crocodiles	6	6	31	18
Squamata	Snakes	42	43	80	83
	Lizards	21	27	70	68
Testudinata	Turtles, Tortoises	40	43	171	223
	Totals	118	130	387	423

Summary: Orders, 5; Species, 130; Specimens, 423

INSECTS • The Insect Department is still greatly handicapped by having but seven display cages at its disposal. They are located in the lobby of the Reptile House. Only by rotating specimens between holding cages and exhibit cages has any substantial increase in species been possible. The purchase of a bulletin board typewriter has enabled us to provide emergency labels for unexpected acquisitions.

Of the 63 species of invertebrates displayed this year, 14 were shown for the first time. They include the Egyptian Scarab Beetle, Six-spotted Tiger Beetle, Velvet Ant, White-marked Tussock Caterpillar, Termite, European Calosoma Beetle, Bishop's Widow Spider, Brush-legged Spider, Green Lynx Spider, Indian Red Millipede, Colombian Giant Centipede, California Giant Centipede, African Scorpion, Indian Black Scorpion. Most of the exotic species were provided by the Midway Trading Company, New York; Carl Abbott, Florida; Lilo Hess, New York; Paul Schnegg, Colombia; Raymond Vidor, New York, and Erich Sochurek, Austria.

Outstanding among insect exhibits is a colony of European Giant Hornets obtained from a camp conducted by Troop 110, Queens Boy Scouts of America, at Bayside. A basal canker in a fifty-foot tree was headquarters for the hornets. William Latham, Director of Maintenance and Operations for New York City Park Department, called the tree to Curator Eddy's attention and together they went after dark to remove it. Most of the hornets had retired by 9:30 P.M. Then the face of the cavity was closed, the tree topped six feet from the ground, and the severed stump loaded for transportation. Inside an exhibit cage at the zoo, the wrapping was removed and the excited hornets poured forth. With provision for introducing sugar syrup and fruit juices for the adult hornets, live flies and other insects for the larval hornets and lilac bark for nest building, the colony

thrived until the usual winter dwindling period. To date all punishment from stings has been avoided.

CENSUS OF ARTHROPODA

December 31, 1949

Orders		Species		Specimens	
		1948	1949	1948	1949
Araneida	Spiders	3	5	4	dozens
Chilopoda	Centipedes	0	1	0	2
Coleoptera	Beetles	4	2	1000's	1000's
Decapoda	Crabs	1	1	1	1
Dermaptera	Earwigs	1	1	dozens	dozens
Diplopoda	Millipedes	0	1	0	8
Diptera	Flies	2	2	dozens	dozens
Hymenoptera	Ants, Bees, Wasps	2	3	1000's	1000's
Isoptera	Termites	0	1	dozens	dozens
Lepidoptera	Butterflies, Moths	7	2	dozens	dozens
Orthoptera	Locusts, Mantids, etc.	9	8	dozens	dozens
Scorpionida	True Scorpions	1	2	1	16
Totals		30	29	many thousands	

Summary: Orders, 12; Species, 29; Specimens, 1000's

Public Service

Identification of insects received by mail and prescribing controls for insect pests continue to occupy no small amount of the Curator's time. Twenty-six new species were added to the mounted insect collection. Scientific inquiries from both public and private sources received prompt attention. Thirteen labels were written and much copy prepared for news photographs taken in the park.

Live Giant Cockroaches were sent by request to the London Zoological Gardens; both Cockroaches and Chinese Praying Mantids to the Pittsburgh Zoological Gardens. Giant Cockroaches on two occasions were dispatched to Dr. C. B. Philip, Principal Medical Entomologist, Microbiological Institute, Hamilton, Montana, who is making a study of micro-organisms of the genus *Rickettsia*. These organisms are held to be transmitted by lice and ticks and may cause either trench or typhus fever when transmitted to man. It is hoped that the micro-organisms can more easily be reared experimentally on Giant Cockroaches than on tick or lice hosts.

A visit to the U. S. Industrial Chemical Laboratory in Baltimore proved most worthwhile. There 8 species of household insects were being reared under controlled conditions, also cutworms and Mexican Bean Beetles. Dr. W. E. Dove, Director of Entomological Re-

search, acted as guide and many problems pertinent to insect culture were discussed.

The following articles were written by Curator Eddy for *ANIMAL KINGDOM*: "Insecticides With Long Arms" (May-June), review of "The Natural History of Mosquitoes" (July-August), and "The Insect World of J. Henri Fabre" (September-October). He gave three illustrated lectures, before the assembly at P. S. 85, New York Botanical Gardens and the Zoological Park's In-service Teachers' Class. Sincere gratitude is expressed to the New York Botanical Gardens for setting aside an unsprayed plot of roses as food for our Parasol Ants. The exhibit of these ants has now entered upon its eleventh year.

ANIMAL HOSPITAL

LEONARD J. GOSS, *Veterinarian*

WITHOUT QUESTION, the most challenging event of the year was the arrival of the Belgian Congo collection on June 15. A veterinarian must face a plane load of 189 new animals with mixed emotions; he shares the public's curiosity and interest, but at the same time he feels concern about what the newcomers may be carrying in the way of diseases and parasites — and what to do about them. The homecoming of a major expedition is a day not readily forgotten and it always sets in motion a series of events or problems resulting in both failures and successes but usually adding much to the sum of experience. The mere "processing" of 189 specimens from a health standpoint is a task of no small proportions. Examining exotic animals, many rarely or never before seen in captivity, and conducting laboratory tests to determine the presence or absence of disease is time-consuming, to say the least. Under such conditions, one encounters parasites and other conditions about which little is known and practically *nothing* recorded as to treatment or eradication. It becomes a matter of proceeding cautiously with drugs and procedures adaptable to domestic animals for comparable conditions.

For the greater part, the Belgian Congo shipment was in good physical condition and relatively free of disease. Certain animals, however, were not all that would have been desired and did require treatment and dietary changes. These attempts were not always successful. A hand-reared Congo Peacock chick succumbed in December, despite our best efforts, of a parasitic infection existing at the time of arrival. On the other hand, two of the three Aardvarks are still alive and harboring parasites that were thought sure to be pathogenic when they were first examined. Several different treatments have been ineffectual.

Our new male Okapi was quite heavily parasitized on arrival and has been treated several times. His condition is improved and he seems to be in no immediate danger but as yet we have not succeeded in completely freeing him of the infection. Even more dis-

concerting is the fact that eleven of fourteen Okapis captured at the same time as ours succumbed to parasitism before leaving the Congo and one specimen shipped to Switzerland died two months after arrival.

Several new drugs, such as Caricide and Aureomycin, have been used during the year, with indications that they are of value for certain conditions and species. New drugs, while known to be effective in domestic animals and human beings, always present the problem of determining dosage and toxicity for exotic species. The general trend today is toward more drugs specific for infections heretofore incurable in wild animals.

Blasting and excavating for the new Great Apes House adjacent to the Panda quarters was considerably disturbing to the Giant Panda, now in her ninth year in the Park. During the height of the blasting she paced excitedly in her living quarters and refused to feed. After several weeks she calmed down sufficiently to feed on Saturdays and Sundays, when blasting was suspended. Once this operation was over, she resumed feeding and tranquility. Her weight as of December 18 was 330 pounds.

In May, a pair of fine 20-pound Jaguar cubs was received and inoculated in the usual fashion with serum and vaccine to protect them against the highly contagious and fatal virus disease of cats — feline enteritis. In August, they sickened and died within five days of each other, and because of the extreme contagiousness of the disease, it was feared the entire cat collection in the Lion House might succumb. Of particular concern were the three three-months-old Tigers. Although they had received vaccine, we could not be certain that it would protect them. Fortunately, only one sickened. This animal was acutely ill for twelve hours and had convulsive seizures, but survived. The misfortune with the Jaguars presents two hypotheses:

- 1 — Jaguars are extremely susceptible to the disease and are unable to develop an immune response to vaccine.
- 2 — The particular vaccine used was impotent.

In defense of the vaccination procedure, it must be pointed out that the other cats in the Lion House, which had all previously been vaccinated in a similar manner, proved to be immune as indicated by the fact that they did not contract the disease. This same vaccination routine has been practiced in the Zoological Park since 1940.

The Jaguars were the first vaccinated animals in the collection to contract feline enteritis since the practice of vaccinating all cats was instituted. A Raccoon and a domestic cat and her five kittens, all unvaccinated, in the Children's Zoo almost a hundred yards away from the Jaguars, contracted the disease and died — an attestation of its contagiousness.

Another year passed without a single case of tuberculosis in the Primates. The majority are now exhibited behind glass or at considerable distance from the public. While the disease seems almost to be cyclic and spreads rapidly among Primates, once one of them contracts it, testing and quarantining new arrivals and exhibiting behind glass or at a reasonable distance from the public seem to be of value.

A Moose calf, born June 3, 1949, died on August 15 despite supplementary feedings of milk, grain and browse in addition to its nursing. Hot weather and lack of natural browse for both the dam and the young make it exceedingly difficult to rear these animals. They seemingly begin to wean at an early age and require certain food items and conditions that we have as yet not succeeded in supplying.

The Abyssinian Wild Ass, in the Zoo since 1925, died suddenly of an intestinal obstruction complicated with renal calculi and cysts.

The Giant and Tree Pangolins, in the Congo shipment, all died of intestinal parasitism probably associated with nutritional deficiencies.

The fine Dalmatian Pelican in the Zoo since July 13, 1929, died of oophoritis and an ovarian tumor. A Golden-crested Penguin, a Rock-hopper and a Gentoo Penguin all died of aspergillosis but we did manage to keep two Kings, a Gentoo and one Rock-hopper in the air-conditioned unit set up as a forerunner of the new permanent Penguin house.

The three Dromedaries suffered from a troublesome intermittent dysentery that assumed serious and epidemic proportions. After a series of examinations and treatments, it was found that the etiological agent was a motile parasitic form inhabiting the intestines. Sicilian Donkeys quartered in an adjoining corral were also found to be infected. The condition was not corrected until the donkeys and camels were simultaneously treated with an arsenical and emetine hydrochloride. These preparations are specifics for human amebiasis.

A Spitting Cobra and a King Cobra succumbed to enteritis, and tuberculous hepatitis and parasitism, respectively. Our second largest (307-pound) Galápagos Tortoise, measuring 53 inches anteroposteriorly over the hump, died of an intestinal obstruction and mesenteric hemorrhage.

From June to September we were fortunate in having the services of Dr. John Bentinck-Smith who held the first summer Veterinary Fellowship offered by the Society. This Fellowship provided excellent training and experience for the incumbent and permitted the accomplishment of certain research. Dr. Bentinck-Smith's services were of great value in processing the Belgian Congo shipment. His research activities were primarily concerned with blood studies of different species and fungus infection of birds. These problems are still being pursued and will be recorded in the literature when completed.

A new research problem on the blood sugar of wild ruminants was instituted. Dr. J. A. Dye of the New York State Veterinary College of Cornell University was provided with blood samples from certain wild ruminants for determination of the blood sugar. This work was done at the Hospital. Blood sugar levels in domestic ruminants are of major importance. A comparative study of wild and domestic ruminants was instituted to help formulate better concepts concerning the physiology involved.

One hundred and forty-six specimens were dispatched to other research institutions with which we are collaborating.

The American Museum of Natural History received 72 specimens — 38 birds, 31 mammals and 3 reptiles which died in the collection.

Birds hospitalized during the year numbered 79 for 647 Hospital days. One hundred and eighty-four mammals were accommodated for 5,470 Hospital days.

During the year, the Hospital Staff suffered markedly by the resignation of Mrs. R. G. Murin, Registered Nurse. Her services and experience are greatly missed.

The Veterinarian presented papers at the American Association of Park Executives and the Annual Conference for Veterinarians at Ohio State University.

A kodachrome film was produced by the Staff Photographer depicting the physical layout of the Hospital and its activities.

During the summer, the Hospital was completely repainted.

Ceramic tile floors were installed in the small ward cages and rubber and asphalt tile floors were laid throughout the building. The resulting improvement in appearance and sanitary conditions is most gratifying.

The mortality in both the bird and mammal collections shows some increase over 1948. This, in part, can be explained by the receipt of a relatively large number of exotic animals difficult to maintain in captivity. It is our practice to include in our mortality statistics every animal born or received alive at the Zoo. No acclimatization period is allowed, as is the practice in some zoos. We feel that all animals received by us should be given the best attention we can offer and every effort should be put forth to keep them alive rather than to allow some arbitrary acclimatization period. As an example, during this year seventeen animals were born and died shortly thereafter. Most of them were born out-of-doors during the winter months when their chances of survival were poor. The net result is that the mortality percentages represent the maximum without benefit of an acclimatization period or attempts to explain away losses on such things as "bad weather," "weak at birth" or "poor condition on arrival."

Through an oversight, miscalculation was made in the 1948 figures for mammals. The corrected figures are indicated by an asterisk in the table below.

MORTALITY TABLES FOR 1949

MAMMALS

<i>Year</i>	<i>Total in Collection</i>	<i>Died</i>	<i>Mortality Percentage</i>
1949.....	721	115	15.95
1948.....	660*	95*	14.30*
1947.....	709	113	15.93
1946.....	651	110	16.89
1945.....	545	85	13.94
Total	3286	518	

AVERAGE MORTALITY FOR PAST 5 YEARS: 15.76%*

AVERAGE MORTALITY FOR PAST 13 YEARS: 20.08%*

BIRDS

1949.....	1645	248	15.08
1948.....	1763	261	14.80
1947.....	1991	276	13.86
1946.....	1573	217	13.79
1945.....	1525	234	15.34
Total	8497	1236	

AVERAGE MORTALITY FOR PAST 5 YEARS: 14.54%

AVERAGE MORTALITY FOR PAST 13 YEARS: 16.30%

THE AQUARIUM

CHRISTOPHER W. COATES, *Curator and Aquarist*

JAMES W. ATZ, *Assistant Curator*

ROSS F. NIGRELLI, *Pathologist*

MYRON GORDON, *Geneticist*

THE MOST IMPORTANT EVENT of the year was the approval by the New York Zoological Society of the plans and specifications for the new New York Aquarium.

In preparation for the laying of plans to finance the new Aquarium, detailed comparisons and estimates of past and future expenditures and revenues of the New York Aquarium were made. These involved the cost of items as diverse as salaries, collections of living aquatic animals, materials and supplies, tools of all sorts, scientific laboratory equipment, fuel, trucks and boats in addition to such relative intangibles as insurance and depreciation.

We have continued in our efforts to discover new and better ways and means of exhibiting aquatic life in public — all with an eye to incorporating those that prove worthy into our proposed building. A new type of fluorescent tube was tested and found to combine almost all of the best features of both fluorescent and incandescent lights. This gives promise of being the most important development in aquarium lighting in many years. We are at present also testing the metal titanium for suitability in underwater aquarium construction.

During September Curator-Aquarist Coates traveled extensively through the mid-west, visiting several of the public aquariums there for the purpose of discussing methods and techniques with the various directors and also of evaluating some of the present day practices in publicly showing organisms that live under water.

Curator Coates devoted a considerable amount of time and effort to the new Penguin House, which includes a large, glass-fronted tank together with a complete circulating system. Plans for operating the Casting Pool adjacent to the Conservation Exhibit and the construction of the several pools involved also required Curator Coates' attention.

The worm farm, providing food for the Duck-billed Platypuses, operated throughout the year under the supervision of Aquarium personnel. Outside interest in this venture was widespread and has still not diminished appreciably. Scores of visitors asked to see the farm in operation, and during the year we received nearly 150 written queries about earthworm culture from 33 states and 5 foreign countries, including Holland, Greece and Saudi Arabia.

Exhibitions

Outstanding additions to our collections were an Arowana from Brazil and two Mudspringers from Africa, the latter being obtained through exchange with the Zoological Society of London. A commercial expedition to the hinterland of British Guiana provided us with Piranhas (*Serrasalmus nattereri*), a freshwater Needlefish, several kinds of Catfishes and two rare species of gymnotid eels.

The lowering of the Park's Beaver Pond gave us an opportunity to collect a number of local species of fishes, including 16 large Carp, 2 American Eels and a number of Largemouth Bass and Sunfishes. The Carp did so well in one of our tanks of new design that another, the sixth, was put on exhibition, replacing one of the old types brought up from the Battery.

From Mr. Barney Figowitz we received a large Black-ringed Groundfish, and from Mr. Rudolph Stone a large China Fish or Snakehead.

Other noteworthy specimens that we have acquired include African Climbing Perch from the Society's Congo Expedition, Giant Gouramis, Chocolate Gouramis, two species of Snakeheads, Half-beaks and several Seahorses from Singapore and Long Island.

Research

Scientific investigations have proceeded along lines laid down in previous years; a good reflection of our current activities may be obtained from the list of publications of the staff.

From the National Cancer Institute of the United States Public Health Service we received a grant of \$19,899 for the prosecution of Dr. Gordon's program on the genetics and correlated aspects of normal and atypical pigment cell growth. The physiology of these cells is being analyzed through endocrinological, biochemical, tissue culture and radiation techniques. Studies on the genetics and pa-

thology of a series of rare, red-pigmented tumors of certain strains of hybrid fishes were made, and a method of producing genetic pigmentary disturbances *within* single species was developed. Heretofore such abnormalities have been confined to crosses between different species. In order to obtain the additional genetic strains of Platyfish and Swordtails from different geographical regions, necessary to advance these studies, Dr. Gordon spent a month in British Honduras, collecting both living and preserved material for analysis. A strain of Swordtail originating in Cordova, Mexico, was also obtained from the University of Michigan through the courtesy of Dr. Reeve M. Bailey.

A second Conference on the Biology of Normal and Atypical Pigment Cell Growth was held on November 18 and 19 at the Zoological Park under the sponsorship of the Society. Dr. Gordon organized this conference and arranged the program of 23 papers by research workers from the United States and England, including some of the leading investigators in the field of human cancer. Nearly 100 persons from Canada and all parts of the United States attended the sessions. A grant in aid amounting to \$500 was received from the Anna Fuller Fund toward the expenses of the conference.

Dr. Nigrelli's studies on the pathology and parasites of fishes occupy a central position in the research efforts of the Aquarium. A study of local Menhaden populations and the recurring heavy mortality of this valuable fish in lower New York Bay was undertaken with Dr. James R. Westman of the Conservation Department of New York State. Dr. Nigrelli was able to determine that no epizootic was responsible for the deaths and that few parasites of any sort were to be found on the fish. Available evidence pointed to a natural mortality of old fish, accelerated by unusual environmental conditions.

The series of researches on the effects of various antimetabolites on lower animals and plants, including aquatic life, that Dr. Eli D. Goldsmith of the New York University Dental College and Dr. Nigrelli initiated last year, has been expanded under a substantial grant to that institution from the National Cancer Institute.

A temporary lack of facilities in the Zoological Park has somewhat limited the continuation of the biophysical aspects of Curator Coates' research program on the Electric Eel. Work has continued with unabated vigor, however, with collaborators in medical fields that are concerned with the chemistry of all nerve function. The latter activities are being largely supported by grants from various

governmental agencies. The collecting of Electric Eels from their native waters in northern South America was not as satisfactory as could have been wished, chiefly because of the difficulty encountered with native collectors. These difficulties seem to have been overcome, however, and a continuing supply of Eels is now assured. If present plans for rebuilding in the Park are carried forward, we shall be enabled to expand that part of the program not directly concerned with man's mental and physical welfare.

The research activities of Dr. Emil Liebman on the haematology of fishes were concluded at the mid-year and were then extended for an additional four months by the Society before termination.

Collaboration

Interest in public aquariums has been maintained at a high level throughout much of the world — if inquiries regarding their construction and management received during the past year are any indication. We have provided advice and information for the designing of aquariums at Atlantic City, Cleveland, Cincinnati, Columbus, Indianapolis, Miami, Los Angeles, San Diego, Basel, Port-au-Prince and Argentina. Visits to the Aquarium to obtain information on our techniques of exhibition and maintenance at first hand were made by Dr. Richard Bernard, Assistant Director of the Quebec Zoological Gardens, and Mr. Marc Gilbert, Engineer, for the aquarium under construction in Quebec; by Professor S. F. Bush of the University of Natal for the proposed aquarium at Durban, and by Mr. Robert O. Smith, Chief of the Peruvian Mission of the U. S. Fish and Wildlife Service, for an aquarium that is being built at Santa Eulalia, near Lima. Drs. S. B. Setna and C. V. Kulkarni also visited us, concerning the new aquarium now under construction in Bombay. Information on the construction of tanks or on marine closed circulations was furnished to the Department of Zoology, University of California, the Johns Hopkins University, the University of Kentucky, the University of Natal at Pietermaritzburg and the Education Division, Zoological Park Commission, City of Detroit.

Collaborators working with us during the year were:

DR. GEORGE M. SMITH, Department of Anatomy, Yale School of Medicine.

DR. RICHARD T. COX, Department of Physics, Johns Hopkins University.

DRS. DAVID NACHMANSOHN, HARRY GRUNDFEST, S. R. KOREY and I. WILSON, Department of Neurology, College of Physicians and Surgeons, Columbia University.

DRS. IRVING LONDON, DAVID RITTENBERG, DAVID SHEMIN and DAVID SPRINSON, Department of Bio-chemistry, College of Physicians and Surgeons, Columbia University.

DRS. GEORGE MARMONT and MORTIMER ROTHENBERG, Institute of Radiobiology and Biophysics, University of Chicago.

DR. M. VERTNER BROWN, College of the City of New York.

DRS. HORACE W. STUNKARD and HARRY CHARIPPER, New York University.

DR. ELI D. GOLDSMITH, New York University Dental College.

DR. AUBREY GORBMAN, Barnard College, Columbia University.

DR. CLIFFORD GROBSTEIN, National Cancer Institute, United States Public Health Service.

MISS FRANCESCA LAMONTE, DRS. CHARLES M. BREDER, JR., LESTER R. ARONSON and T. C. SCHNEIRLA, American Museum of Natural History.

DRS. CARYL P. HASKINS and SEYMOUR HUTNER, Haskins Laboratories, New York.

DR. DANIEL MERRIMAN, Bingham Oceanographic Laboratory, Yale University.

DR. JAMES R. WESTMAN, State of New York, Conservation Department.

DR. SOPHIE JAKOWSKA, College of Mount St. Vincent, New York.

DR. G. E. GATES, Colby College, Waterville, Maine.

DR. WILLIAM ANTOPOL, Beth Israel Hospital, New York.

DR. ABNER I. WEISMAN, Jewish Memorial Hospital and Metropolitan Hospital, New York.

Drs. Nigrelli and Gordon gave their courses in the Graduate School of Arts and Sciences, New York University, on fish diseases and parasites and on the genetics of fishes, respectively. The following students received advanced degrees under the sponsorship of Dr. Nigrelli or Dr. Gordon during the year:

MISS EUGENIE CLARK, American Museum of Natural History. Ph.D.

MR. WALTER CHAVIN, University of Arizona. M.S.

MISS ETHEL HAFTER, American Museum of Natural History. M.S.

MR. JAMES W. INGALLS, New York University. M.S.

MR. THOMAS J. KING, New York University. M.S.

MISS GLADYS REITER. M.S.

The following candidates for advanced degrees at New York University are now working under Dr. Nigrelli or Dr. Gordon on research problems:

MISS OLGA ARONOWITZ, New York Zoological Society.

MR. JAMES W. ATZ, New York Zoological Society.

MR. SAMUEL BIEBER, New York University.

MISS ETHEL HAFTER, American Museum of Natural History.

MR. THOMAS J. KING, New York University.

MR. THEODOR R. MARCUS, New York Zoological Society.

Living aquatic materials, including special genetic strains of fishes, were supplied to the Chester Beatty Research Institute, Royal Cancer Hospital, London, the McManes Laboratory of Pathology, School of Medicine of Pennsylvania University, the Long Island School of Medicine and Teachers College, Columbia University. Cooperation with the Department of Marine and Aviation, New York City, the Federal Security Agency, Pure Food and Drug Administration, the Department of Health, New York City and the Conservation Department, State of New York, has been close as in previous years.

Publications

The staff and those investigators directly sponsored by us published during the year:

MR. COATES

Behavior of a Pair of Leaf Fish. *Aquarium Journ.*, Vol. 20, No. 10, pp. 266-267; 272.

Lighting the Tank in a Public Aquarium. With James W. Atz. *Parks & Recreation*, Vol. 32, No. 8, pp. 480-485.

Fluorescent Lights for Home Aquaria. With James W. Atz. *Aquarium Journ.*, Vol. 20, No. 12, pp. 299-302.

Weekly column on fishes in the *New York Sun* continued for nineteenth year.

MR. ATZ

A Brief History of the Word "Aquarium." *Aquarium Journ.*, Vol. 20, No. 1, pp. 26-28.

The Myth of the Balanced Aquarium. *Natural History*, Vol. 58, No. 2, pp. 72-77; 96. *Veterinary Excerpts*, Vol. 9, No. 5, pp. 99-105.

Feeding the Fishes. *Aquarium Journ.*, Vol. 20, No. 2, pp. 40-45.

They Proved It — the Fish Shoots! *ANIMAL KINGDOM*, Vol. 52, No. 2, pp. 44-47. *Aquarium Journ.*, Vol. 20, No. 7, pp. 186-190.

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The Social Life of Fishes. *ANIMAL KINGDOM*, Vol. 52, No. 5, pp. 154-160.

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DR. NIGRELLI

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Aminopterin and Response of Frog Oviducts to Estradiol. II. Histological Studies and Mitotic Counts. With E. D. Goldsmith and S. S. Schreiber. *Proc. Soc. Exp. Biol. and Med.*, Vol. 71, No. 3, pp. 461-463.

- Interference with Testosterone-induced Growth of the Seminal Vesicles and Coagulating Gland in Male Mice by a Folic Acid Antagonist. With E. D. Goldsmith and H. M. Black. *Nature*, Vol. 164, No. 4158, pp. 62-63.
- Glycerophosphatases of the Normal and Tumorous Frog Kidney. With Thomas J. King. *Proc. Soc. Exp. Biol. and Med.*, Vol. 72, No. 2, pp. 373-376.
- Studies on Spontaneous Neoplasma in Fishes. IV. Ganglioneuroma in the Marine Fish, *Halichoeres bivittatus* (Bloch), from Bimini, B.W.I. *Cancer Res.*, Vol. 9, No. 10, p. 615. Abstract.
- The Genetics and Pathology of the Melanomas in the Hybrid Offspring of Two Species of Swordtails, *Xiphophorus montezumae* and *Xiphophorus hellerii*. With Myron Gordon. *Cancer Res.*, Vol. 9, No. 9, p. 553. Abstract.
- The Effect of Pteroylglutamic Acid Antagonists on the Response of the Reproductive Accessories of C57 Male Mice to Testosterone. With E. D. Goldsmith and H. M. Black. *Journ. Clinical Endocrinology*, Vol. 9, No. 7, p. 674. Abstract.
- The Effect of a Pteroylglutamic Acid Antagonist on the Response of the Amphibian Immature Oviduct to Estrogen. With E. D. Goldsmith and S. S. Schreiber. *Cancer Res.*, Vol. 9, No. 10, p. 605. Abstract.
- Effects of a Nitrogen Mustard on the Cichlid Fish, *Tilapia macrocephala* (Bleeker). With Sophie Jakowska. *Cancer Res.*, Vol. 9, No. 10, p. 630. Abstract.
- Glycerophosphatases in the Frog Kidney. With Thomas J. King. *Anat. Rec.*, Vol. 105, No. 3, p. 102. Abstract.
- The Morphology and Histology of the Pancreas of the Platyfish, *Platypecilus maculatus*. With Gladys Reiter. *Anat. Rec.*, Vol. 105, No. 3, pp. 130-131. Abstract.

DR. GORDON

- Review of the Genetic Factors in Melanotic Development in Fishes. *Unio Internationalis Contra Cancrum, Acta*, Vol. 6, No. 1, pp. 254-261. (1948).
- Reunion After 300,000 Years. *ANIMAL KINGDOM*, Vol. 52, No. 4, pp. 118-125.
- Fische als Kompass — zur Geographie der Platy-Fische. *Deutsche Aquarien-und Terrarien-Zeitschrift*, Vol. 2, No. 10, pp. 170-171.
- Genetics, Speciation and the Origin of Melanotic Tumors in Fishes. *Rec. Genetics Soc. Amer.*, No. 18, pp. 90-91. *Genetics*, Vol. 35, No. 1, pp. 110-111. Abstract.
- The Genetics and Pathology of the Melanomas in the Hybrid Offspring of Two Species of Swordtails, *Xiphophorus montezumae* and *Xiphophorus hellerii*. With Ross F. Nigrelli. *Cancer Res.*, Vol. 9, No. 9, p. 553. Abstract.
- Structural and Functional Characteristics of Spontaneous Thyroid Tumors in a Swordtail Fish Species. With Aubrey Gorbman. *Cancer Res.*, Vol. 9, No. 10, p. 605. Abstract.
- The Role of the Distal Tip of the Gonopodium during the Copulatory Act of the Viviparous Teleost, *Platypecilus maculatus*. With Eugenie Clark and Lester R. Aronson. *Anat. Rec.*, Vol. 105, No. 3, pp. 26-27. Abstract.

DR. LIEBMAN

- The Leucocytes in Regenerating Limbs of *Triturus viridescens*. *Growth*, Vol. 13, No. 2, pp. 103-118.

Trophocytes in *Arbacia punctulata* and their Role in Ovular Growth and in Respiration. *Nature*, Vol. 164, No. 4167, p. 459.

DR. BRUNST

Biological Effects of Roentgen Rays of Various Wavelengths. With E. A. Sheremetieva-Brunst. *Amer. Journ. Roentgenology and Radium Therapy*, Vol. 62, No. 2, pp. 252-256.

Personnel

Miss Ethel Hafter resigned her position as Laboratory Technician; her place was taken by Mrs. Irma Lubin.

Mr. Coates was appointed Co-chairman of the Committee on Aquariums of the American Association of Zoological Parks and Aquariums, one of the affiliated groups of the American Institute of Park Executives. In January he acted as observer for the Conservation Foundation at the opening sessions of the International Northwest Atlantic Fisheries Conference held in Washington.

Mr. Thomas Howley was elected Secretary of the New York Zoological Park Safety Committee, a position in which he served with distinction.

Members of the staff gave papers, lectures, talks and demonstrations at the following institutions and places:

American Association for Cancer Research, Detroit meeting.

American Association for the Study of Internal Secretions, Atlantic City meeting.

American Society of Zoologists, New York meeting.

Genetics Society of America, New York meeting.

Society for the Study of Evolution, New York meeting.

Botanical Society of America, New York meeting.

American Institute of Electrical Engineers, New York meeting.

American Association of Zoological Parks and Aquariums, Detroit meeting.

New York Academy of Sciences, symposium on antimetabolites.

New York Zoological Society, symposium on pigment cell growth.

New York Microscopical Society.

Bingham Oceanographic Laboratory, Yale University.

Department of Animal Behavior, American Museum of Natural History.

Beta Lambda Sigma, Washington Square College, New York University.

Honorary Biology Society, St. Francis College.

Millbrook School, New York.

Careers in Science, American Museum of Natural History.

Society of New York Aquarists.

Staten Island Aquarium and Terrarium Society.

Greenville Community Church Center, Scarsdale.

Station Hospital, Camp Kilmer, New Jersey.

U. S. Marine Hospital, Staten Island.

Kingsbridge Veterans Hospital, Bronx.

Kiwanis Club, Highland Park, N. Y.

Radio and Television Stations WCBS, WTHT, WTOR, WABD, WJZTV.

DEPARTMENT OF TROPICAL RESEARCH

WILLIAM BEEBE, *Director*

JOCELYN CRANE, *Research Zoologist*

HENRY FLEMING, *Entomologist*

Zoological Park Laboratory

Nineteen hundred and forty-nine was, for our department, an essentially Zoological Park Year, interrupted by two short trips. As in 1947, the accumulation of specimens and notes, paintings and photographs from past expeditions formed a stock pile of such proportions that only a moderate amount could be thoroughly studied and published.

Exhibition

The "Lost in the Jungle" exhibit in the Heads and Horns Building has continued to attract as much interest as at any time since it was inaugurated in June, 1943, six and a half years ago. Although it is a static exhibit of photographs, color plates, charts, and preserved specimens from malaria mosquitoes to edible rattlesnakes, yet it must contain elements of vital, continuous interest for the public.

Miss Laura Schlageter, Staff Artist, showed fifteen of her Rancho Grande paintings at the Members' Meeting of the Society, and later forty were exhibited in the Argent Galleries.

Collaboration With Other Institutions

Throughout the year there was no slackening in the selection and shipping of collections by Henry Fleming, sending them to specialists who are actively studying and reporting on them. It is a matter for continued satisfaction that specimens, plates and photographs of expeditions made as long ago as a quarter of a century, are still being referred to, loaned out and finally published in our own *Zoologica* and other technical journals. After a year the Creole Petroleum Corporation is still having copies made of Miss Crane's Rancho Grande color films, and distributing them throughout Venezuela.

Staff Activities

Mr. Fleming has spent much time on vital identifications of insects and other invertebrate groups. Without definite naming the host of field notes and dissections cannot be utilized and published. This work on tropical specimens emphasizes the vast amount of work still to be done by entomologists all over the world before any general summary can be made.

Miss Crane has brought to a climax her intensive study of the ecology of salticid spiders. Her paper Number Four in this series, in the final number of *Zoologica* for 1949, sums up the display behavior of these interesting creatures. This paper was awarded Honorable Mention in the A. Cressy Morrison Prize Competition for 1949, of the New York Academy of Sciences.

Dr. Beebe was the recipient of several honors during the year. He was made a Foreign Corresponding Member of the Venezuelan Academy of Sciences; he was elected an Honorary Member of the Explorers Club; he was one of thirty-two to receive a citation and an Oscar from Youth United of Brooklyn. On October 16 his fiftieth year was completed as an officer of the Society and the Zoological Park.

Among other investigations, three additional papers were published on the migration of insects at Rancho Grande, and six other papers were either completed or outlined.

A New and Permanent Tropical Field Station

The initiation and evolution of any new undertaking is often as interesting as its subsequent activities. In 1946 and 1948 Miss Crane spent several months in Tobago and Trinidad in search of a favorable site for a field station which would be the successor to Rancho Grande. Two short trips to Trinidad in the present year by members of the staff confirmed the decision to select a house and property in the heart of the northern mountain preserves of Trinidad. This is known as Simla, in Arima Valley, and, with twenty-two acres of forested land, was purchased by the Director for use as the laboratory of the Zoological Society. The last three months of 1949 were spent in intensive planning and packing in preparation for the forthcoming Forty-eighth Expedition of the Department. (See *ANIMAL KINGDOM*, Vol. 52, pp. 138-143).

The fact that Simla will be a permanent field station made pre-

liminary preparations much more extensive and detailed than usual. A complete household outfit is being taken in addition to the usual laboratory equipment.

Further details of this undertaking are reserved for next year's report.

Publications

Thirty-seven contributions from the department appeared in print during 1949, of which twelve came out in the Zoological Society's publications — three in *ANIMAL KINGDOM* and nine in *Zoologica*.

Two additional translations of Dr. Beebe's books appeared and a new volume, "High Jungle," was published, concerned with the observation of jungle life at Rancho Grande.

823 — West American Mollusks of the Genus *Conus*. G. D. Hanna and A. M. Strong. *Proc. Cal. Acad. Sci.*, Vol. 26, No. 9, 1949, pp. 247-322.

— 824 — William Beebe. John Tee-Van. *Zoo Log*, Jan. 15.

825 — The Horse Nobody Eats. Melvin Beck. *Ford Times*. February.

826 — A New Species of *Trophon* from the Gulf of California, *Trophon beebei*. L. S. Hertlein and A. M. Strong. *Bulletin Southern California Academy of Sciences*, Part 2, 1947, pp. 79-80.

827 — Pericopidae of Kartabo, British Guiana, and Caripito, Venezuela. Henry Fleming. *Zoologica*, Vol. 34, No. 4, pp. 19-20.

828 — Collection of Phalangids from Rancho Grande, Venezuela. C. and M. Goodnight. *Zoologica*, Vol. 34, No. 5, pp. 21-24.

829 — Fresh-water Crabs of the Genus *Pseudothelphusa* from Rancho Grande, Venezuela. Jocelyn Crane. *Zoologica*, Vol. 34, No. 6, pp. 25-30.

— 830 — Lee Crandall. William Beebe. *Zoo Log*, March 15.

— 831 — Moth Nights at Rancho Grande. William Beebe. *ANIMAL KINGDOM*, Vol. 52, No. 2, pp. 34-40.

832 — John Tee-Van. Lee Crandall. *Zoo Log*, April 15.

833 — Studies of South American Psammocharidae, II. Nathan Banks. *Bulletin of the Museum of Comparative Zoology*, Vol. 99, No. 2, (12 Kartabo species).

— 834 — Private Lives of Jungle Falcons. William Beebe. *Pacific Discovery*, Vol. 2, No. 2, pp. 3-12.

— 835 — Moth Catcher. William Beebe. *Life*, May 9.

— 836 — A Frog Produces Babies. William Beebe. *Life*, May 16.

— 837 — Annual Report of Department of Tropical Research for 1948, pp. 31-35.

— 838 — High Jungle. William Beebe. Duell, Sloan and Pearce, New York, xii, pp. 1-379.

— 839 — Llanos Sanctuary. William Beebe. *ANIMAL KINGDOM*, Vol. 52, No. 3, pp. 66-69.

840 — Comparative Biology of Salticid Spiders. III. Systematics and Behavior in Representative New Species. Jocelyn Crane. *Zoologica*, Vol. 34, No. 7, pp. 31-52.

- 841 — The Swifts of Rancho Grande, North-central Venezuela, with Special Reference to Migration. William Beebe, *Zoologica*, Vol. 34, No. 8, pp. 53-62.
- 842 — Eastern Pacific Expeditions of the New York Zoological Society. XL. Mollusks from the West Coast of Mexico and Central America, Part VII. L. G. Hertlein and A. M. Strong. *Zoologica*, Vol. 34, No. 9, pp. 63-97.
- 843 — Insect Migration at Rancho Grande in North-central Venezuela. General Account. William Beebe. *Zoologica*, Vol. 34, No. 12, pp. 107-110.
- 844 — Marvellous Moth that Builds a Play-pen. R. Raymond, *Sunday Mirror*, July 3.
- 845 — The Monster. William Beebe. *This Week*, July 24.
- 846 — Amazing Tactics of Ant Armies. William Beebe. *Science Digest*, August, pp. 43-47.
- 847 — Who's Who of Sharks. Review of "Fishes of Western North Atlantic." William Beebe. *Herald Tribune*, August 21.
- 848 — Man's Deepest Dive. *Life*, August 29.
- 849 — Great Migration of Insects. John Schell. *Louisville Times*, August 29.
- 850 — Scale Adaptation in a Tropical Moth. Adapted from William Beebe. *Illustrated London News*.
- 851 — Simla: Our New Field Laboratory in Trinidad. William Beebe. *ANIMAL KINGDOM*, Vol. 52, pp. 138-143.
- 852 — Migration of Papilionidae at Rancho Grande, Venezuela. William Beebe. *Zoologica*, Vol. 34, No. 13, pp. 119-126.
- 853 — She Buys Jungles. Hugh Scott. *Philadelphia Inquirer Magazine*, *Today*, October 30.
- 854 — A Walk in the Jungle. William Beebe. *Star Weekly*, Toronto, November 12.
- 855 — Cloud Forest Adventures. M. M. Carey. *Frontiers*, December, pp. 34-38, 61-62.
- 856 — The Man Who Rode an Alligator. William Beebe. *New York Times*, November 27.
- 857 — Here, There and Everywhere with Jocelyn Crane. Princess Kropotkin. *Today's Woman*, December.
- 858 — Comparative Biology of Salticid Spiders at Rancho Grande, Venezuela. Part IV. An Analysis of Display. Jocelyn Crane. *Zoologica*, Vol. 34, No. 17. pp. 159-214.
- 859 — Eastern Pacific Expeditions of the New York Zoological Society. Mollusks from the West Coast of Mexico and Central America. Part VIII. L. G. Hertlein and A. M. Strong, *Zoologica*, Vol. 34, No. 19, pp. 239-258.
- 860 — Tettigellidae and Gyponidae (Homoptera) of Kartabo, British Guiana. Z. P. Metcalf. *Zoologica*, Vol. 34, No. 20, pp. 259-279.
- 861 — Jungle Islands. William Beebe. *The Book of Knowledge*. 1949.
- 862 — Our Changeless World. William Beebe. *ANIMAL KINGDOM*, Vol. 51, No. 6, pp. 170-174.
- 863 — Paradise for Scientists. I. Labastille. *The Grace Log*, December.
- 864 — Tropical Jumping Spiders. *Science News Letter*, December 24, p. 411.

DEPARTMENT OF EDUCATION

HERBERT J. KNOBLOCH, *Associate-in-Charge*

ANNE ORTH EPPLE, *Assistant*

VIRGINIA B. JOHNSON, *Assistant*

WORK CONTINUED throughout the year on the recording of animal sounds on magnetic tape and many new voices have been added to our library. During the summer the department worked closely with the Animal Behavior Research Fellows, recording animal voices and playing them back to elicit certain responses.

Addresses by Gov. Thomas E. Dewey and other officials were recorded at the dedication and ground-breaking ceremony of the Conservation Exhibit. Certain animal sounds and a portion of the Governor's address were synchronized with two of the Society's motion pictures.

On November 8, the 50th Anniversary of the Zoological Park, staff officers made a recording in the Education Department's offices. This recording on tape and a transcription on wire will be sealed against deterioration and placed in the cornerstone of the new Great Apes House.

Guided tours numbered 113 for 3,021 persons. Many special tours were given and 86 members and their friends were conducted on 23 Behind-the-Scenes tours.

Schools and organizations visiting the Zoological Park and the Farm-in-the-Zoo included 1,805 schools, 2,682 classes and organized groups and 104,035 individuals. The reopening of the Farm played no small part in the grand total.

According to available records, June of 1948 was our best single month for visitors to the Zoological Park by organized groups, with 34,165 persons. However, if the Farm is included, both May and June of 1949 surpassed June of the previous year, with 35,251 and 36,852 persons respectively.

The department gave 15 lectures to audiences totalling about 1,770 persons. Six radio broadcasts were made. Five natural history forums were held for approximately 1,450 veterans in hospitals. Again this year John Kieran, Herman Forster, Brayton Eddy, Lloyd

Sandford, James Atz and Herbert Knobloch participated in these programs.

Anne Orth Epple visited 76 schools and institutions and gave 309 talks, illustrated with live animals, to 19,681 children. Requests for her services are far more numerous than she can accept, and it has been decided that she will not be able to visit Nurseries, Nursery Schools, Day Care Units and similar organizations in which groups are small and the children too young to absorb the material. Transportation must be provided for the lecturer and her animals.

Question House opened for the season on Easter Sunday, April 17, and closed on November 13. It recorded 33,560 visitors and 13,316 questions of which 3,463 were directional. Inquiries by telephone were 271 and by mail 55. One hundred and thirty questions required research and were answered by letter; 530 inquiries were about Platypuses. Sales from Society publications and natural history books totaled \$667.65 and Kodachrome slide sales brought in \$67.50. In the periods before the Question House was opened and after it was closed, 179 telephone calls and 45 letters were received. Once again this institution provided information for a wide variety of organizations. A Kodachrome view box holding 56 slides was purchased to display 2 x 2 Kodachrome slides at Question House. Duplicates in cardboard ready mounts were sold at fifty cents each.

Miss Virginia B. Johnson started employment in the department on June 27. Miss Nelda Lee Davis left on July 15.

A two-page article on the care, feeding and breeding of Golden Hamsters was prepared in mimeograph form for free distribution in answer to the flood of inquiries about these little animals as pets.

Our motion picture films were shipped out on 103 orders and shown to 9,875 persons. The rental return was \$215.40. Sales from Kodachrome slides from the Education office totaled \$61.50 and sales of films \$1,416.50. Staff officers used our films 33 times to illustrate lectures and there were 27 loans and special showings in addition to 19 preview requests. Seventy-five more Kodachromes were added to our slide collection.

The present status of our slide collection, its constant increase and plans for the future made it imperative that we revise our slide filing and indexing systems. Slides are now filed and indexed according to classification and animal, and numbered. A new, extensive slide list was prepared and mimeographed for distribution to schools, teachers and others interested in purchasing our 2 x 2 Kodachromes.

PUBLICATION AND PHOTOGRAPHY

WILLIAM BRIDGES, *Curator*

SAM DUNTON, *Photographer*

THE MAKING OF THREE MOTION PICTURES in 16 mm. Kodachrome occupied a large part of Staff Photographer Dunton's time during the summer and early fall. The most elaborate of these was "Looking for the Answers," 1 reel, with sound, in the cutting of which we had the assistance of Dr. C. R. Carpenter, Professor of Psychology, Pennsylvania State College. The film deals with the experimental work of the 1949 group of Animal Behavior Research Fellows in the Zoological Park, and while the work reported upon was merely "in progress," and no attempt was made in the picture to express findings and results, "Looking for the Answers" gives an excellent idea of the methods of animal behavior research and thus we believe it will be of interest to schools.

A second film was entitled "Happy Birthday" and was chiefly a pictorial roundup of events in the Zoological Park in its fiftieth anniversary year. Mr. Dunton obtained excellent footage on the Congo Peacocks after their arrival in mid-June; these are presumably the first motion pictures ever made of this bird.

Another film, untitled, showed the physical features and routine of the Zoological Park's Animal Hospital. This was a special picture made for our Veterinarian and will presumably have little distribution except to professional audiences.

The Staff Photographer added 687 monochrome negatives to the collection and 115 Kodachrome slides. Our still photographic collection now contains about 28,000 negatives. Color photography is of growing importance and it is noteworthy that the Aquarium's geneticist is finding many uses for a series of 4 x 5 Kodachromes of small tropical fishes illustrating his cancer research, made by Mr. Dunton. The pictures were of such technical excellence that it was possible to make paper prints in a routine color-printing process with entirely satisfactory results.

The Photographic Section received 625 orders for photographs, copy negatives, slides, X-rays, transparencies and blueprints.

In the Printshop, the volume of work was slightly in excess of the previous year, with 798 requests for labels and special printed matter; these required the printing of 306 new labels. Jacob Messinger, our printer since 1941, retired near the end of the year and Oscar Larsen was engaged. Mr. Messinger was a craftsman of the old school, a perfectionist whose skill was equal to any demands put upon it. A factory-rebuilt Colt's Armory press, 14 x 22, was installed in October, replacing the ancient press that had served the Printshop since it was established in 1938.

Twenty papers, to a total of 280 pages, were published in the quarterly parts of *Zoologica*. Volume 34 contained the following:

PART 1. MAY 16, 1949

1. *Paradilepis simoni*, n. sp., a cestode parasitic in the osprey. (Cestoda: Dilepididae). By Robert Rausch. Text-figure 1.
2. A contribution to the study of North American cestodes of the genus *Paruterina* Fuhrmann, 1906. By Robert Rausch and Everett L. Schiller. Text-figures 1-12.
3. Behavioral interactions in a herd of Barbary sheep (*Ammotragus lervia*). By Irwin Katz.
4. The Pericopidae (moths) of Kartabo, British Guiana, and Caripito, Venezuela. By Henry Fleming.
5. Report on a collection of phalangids from Rancho Grande, Venezuela. By Clarence and Marie Goodnight. Text-figures 1-4.
6. Fresh-water crabs of the genus *Pseudothelphusa* from Rancho Grande, Venezuela. By Jocelyn Crane. Text-figures 1-3.

PART 2. AUGUST 10, 1949

7. Comparative biology of salticid spiders at Rancho Grande, Venezuela. Part III. Systematics and behavior in representative new species. By Jocelyn Crane. Text-figures 1-8.
8. The swifts of Rancho Grande, north-central Venezuela, with special reference to migration. By William Beebe. Plate I. Text-figures 1-3.
9. Eastern Pacific expeditions of the New York Zoological Society. XL. Mollusks from the west coast of Mexico and Central America. Part VII. By Leo George Hertlein and A. M. Strong. Plate I.
10. Fishes that rank themselves like soldiers on parade. By E. W. Gudger. Plate I; Text-figures 1 & 2.
11. Notes on seasonal changes in *Creatophora cinerea*, the wattled starling. By Lee S. Crandall. Plate I.
12. Insect migration at Rancho Grande in north-central Venezuela. General account. By William Beebe. Plates I & II; Text-figure 1.

PART 3. NOVEMBER 30, 1949

13. The behavior of two captive specimens of the lowland gorilla, *Gorilla gorilla gorilla* (Savage & Wyman). By B. F. Riess, Sherman Ross, S. B. Lyerly & H. G. Birch. Plates I & II; Text-figures 1 & 2.

14. Migration of Papilionidae at Rancho Grande, north-central Venezuela. By William Beebe. Plate I; Text-figure 1.
15. Notes on *Ergasilus* parasites from the New Brunswick, New Jersey, area, with a check list of all species and hosts east of the Mississippi river. By Roland F. Smith.
16. An analysis of reproductive behavior in the mouth-breeding cichlid fish, *Tilapia macrocephala* (Bleeker). By Lester R. Aronson. Plates I-III; Text-figures 1-10.

PART 4. DECEMBER 30, 1949

17. Comparative biology of salticid spiders at Rancho Grande, Venezuela. Part IV. An analysis of display. By Jocelyn Crane. Plate I; Text-figures 1-9.
18. Differential effects of estradiol, estradiol benzoate and pregneninolone on *Platypoecilus maculatus*. By Margaret Cordsen Tavalga. Plates I-V; Text-figures 1-5.
19. Eastern Pacific expeditions of the New York Zoological Society. XLI. Mollusks from the west coast of Mexico and Central America. Part VIII. By Leo George Hertlein & A. M. Strong. Plate I.
20. Tettigellidae and Gyponidae (Homoptera) of Kartabo, Bartica District, British Guiana. By Z. P. Metcalf. Text-figures 1-8.

ANIMAL KINGDOM was published in the six regular numbers. Volume LII totalled 182 pages plus a 32-page supplement in the November-December issue on the history of the Zoological Park.

CONSTRUCTION AND MAINTENANCE

QUENTIN MELLING SCHUBERT, *Superintendent*

THREE MAJOR CONSTRUCTION JOBS were begun in the Zoological Park in 1949 with private contracting firms doing the work under more or less direct supervision of the department of Construction and Maintenance. These were the Great Apes House, the Penguin House and the Casting Pool that is being built adjacent to the Conservation Exhibit. All were well along at the year's end.

The inadequacy of the Zoological Park's electric power supply has been recognized for some time and the new construction made

it imperative that the condition be remedied. Late in the fall work was begun on new transformer vaults at the Service Gate and under the pavement at the north end of the Lion House; larger transformers are being installed and power should now be sufficient for our needs for several years to come.

The Pheasant Aviary, consisting of 34 outside cages, was completely reconstructed in the spring. A group of 15 former rodent cages was reconstructed and completed prior to Spring Opening, for housing and exhibiting the collection of small mammals and birds brought from the Congo.

Extensive work done in the Hospital included tiling of all cage floors and covering all other floor surfaces with rubber or asphalt tile as required. The Hospital interior was also completely painted.

After fifty years of operation, all entrance and exit turnstiles at the Boston Road Gate were removed and replaced with modern equipment, now operating.

Large doors were made in our shops and installed in the Lobbies of the Elephant House.

The Raccoon Pond, east of the Zebra House, was graded and the perimeter of the pond re-stoned and planted. New platforms were built for underwater feeding.

Essential but less evident work was the replacing of boilers in the Heads and Horns Building and the Kangaroo House. A new Boiler and Oil Burner were installed in the Flamingo Terrace Restaurant to provide the required 180-degree water temperature for a new dish-washer. In the Administration Building service has also been improved by the installation of a new boiler and oil burner.

In our woodworking shop a highly satisfactory vacuum system has been installed. This removes all shavings and sawdust (reducing the dust hazard) and reclaims the sawdust for use throughout the Park. Formerly sawdust had to be purchased.

Increasing age of the buildings and equipment has caused maintenance problems to mount. During the year 2,200 work orders were completed in addition to the routine activities connected with the Members' Meeting, the spring opening of the Zoo Bar, Children's Zoo, Farm-in-the-Zoo and Tractor Train operations, and general maintenance of the Park.

ANIMAL BEHAVIOR RESEARCH AND TRAINING SUMMER 1949

C. R. CARPENTER, *Coordinator*

THE BEHAVIOR RESEARCH AND TRAINING PROGRAM which was initiated by the Society in 1947 was continued for the third year during 1949. The purposes of this program were brought into sharper focus than formerly and may be stated as follows: (1) to perform basic research on the behavior and adjustments of captive wild animals, emphasizing especially investigations on specimens and problems for which the Zoological Park provides unusually favorable opportunities; (2) to promote the training for young scientists in the general field of animal behavior research, and (3) to continue explorations of the feasibility of expanding the Society's activities in the area of behavior research.

Four Summer Research Fellows were appointed in the spring for approximately three months of intensive work in the Zoological Park. Those appointed in 1949 were: Dr. L. T. Evans, Research Associate of the American Museum of Natural History; Mr. John V. Quaranta, Fordham University Graduate School and Department of Psychology; Mr. Joseph A. Murnin, The Pennsylvania State College Graduate School and Department of Psychology; and Mr. Dieter Burckhardt, The University of Basel and the Basel Zoological Garden, Basel, Switzerland.

The four Summer Research Fellows selected problems and planned investigations on the following: (1) Visual Discrimination Learning of the African Elephant — Murnin; (2) Social Behavior of Nyala Antelopes — Burckhardt; (3) Problem Solution Learning of the Marmoset — Murnin; (4) Color Discrimination of the Satin Bower Bird — Murnin and Burckhardt; (5) Color Discrimination Learning of Giant Tortoises — Quaranta and Evans; (6) Organization of a Herd of Giant Tortoises — Evans and Quaranta; (7) A Study of a Sound "Releaser" in the Alligator — Evans, Quaranta and Murnin.

Summer Research Fellows have been encouraged to select their own problems, after a period of exploration and a series of discussions with the Coordinator and Park staff. Thus far, the assignment of research problems has been avoided but this may be desirable to some extent in the future. Also, Fellows have been encouraged to work cooperatively as a group. Some success in getting cooperative group efforts has resulted. However, it would seem that universities and graduate schools such as have been represented by the appointed Fellows have not been especially successful in training men for cooperative group research. Nevertheless, during the past year several of the Fellows worked closely together and gave each other a great deal of assistance.

The Fellows of 1949 have been more persistent and successful than former groups in completing studies undertaken and in reporting them. Several papers were read by them at the meetings of the American Association for the Advancement of Science. Two manuscripts are almost ready for publication. The Fellows and the Coordinator assisted the Society's staff in producing a public relations motion picture entitled "Looking for the Answers." Two publications have appeared, one each from the 1947 and 1948 Summer Behavior Research activities:

1. Behavioral Interactions in a Herd of Barbary Sheep (*Ammotragus lervia*). By Irwin Katz. *Zoologica*, Vol. 34, Part 1, 1949.
2. The Behavior of Two Captive Specimens of the Lowland Gorilla, *Gorilla gorilla gorilla* (Savage & Wyman). By B. F. Riess, Sherman Ross, S. B. Lyerly & H. G. Birch. *Zoologica*, Vol. 34, Part 3, 1949.

It has become very clear during the past three years that behavior research should be expanded. Perhaps the next most feasible step in this direction is to select and appoint qualified Fellows on the post-doctoral level of training for work throughout the year. This would give desirable continuity to the program and make it possible to carry out systematic investigations over long periods of time.

MEMBERSHIP

DONALD T. CARLISLE, *Chairman, Membership Committee*

THERE WAS A SLIGHT DECLINE in total membership in 1949 — the first drop in our curve since 1944. While we did not exactly expect this decline we were prepared for it as we had purposely reduced our promotion for new members to an absolute minimum throughout the year — only two small mailings to a limited list in the spring and a third rather late in December. Keeping this expense as low as possible, it was hoped that during 1949 enough new members would be gained to offset the inevitable annual losses. We made a miscalculation for, in spite of the addition of over 300 new members during the year, the records show a decline of a little more than 5% from the 1948 total.

We are feeling the force of the fact that we must constantly recruit new members in order to hold our desired total. It must be borne in mind that in spite of our recent gains a large percentage of our members have been with us many years. Therefore, the Society's officers urge all members to help maintain our rolls by sending us the names of new member prospects. In this way the membership was extremely helpful in 1945 — recruiting new interest in the Society. We would again appeal to you for a strong effort in behalf of this goal.

While total membership declined due chiefly to the relaxation of our promotional effort, a most encouraging gain was made in our new contributing membership classification. This new class was inaugurated in February, 1948, and now represents nearly 10% of the total membership of the Society. During 1948 we gained 140 contributing members either as new friends or by transfer from annual memberships. In 1949, 170 more contributing members were gained, making a total of 310 for these first two years.

It is most gratifying that so many of our friends wish to extend this additional help to the Society. As a matter of fact, these contributing members are to be thanked for the fact that we were able

to maintain the quality and number of our members' services during the past year because of their financial help.

We believe that the Society's membership has an unusually strong sense of loyalty to this organization. It is expressed to us in many ways. The coming year will be an extraordinarily active and interesting one at the Park and on all the other fronts of Society action. Nineteen-Fifty should be a most flourishing year for new members. We hope that all our members will help us to make it so.

THE CONSERVATION FOUNDATION

INASMUCH as a full statement of the Conservation Foundation's activities will be made available to all interested Society members in the Annual Report of the Foundation for 1949, we present here only a brief summary of some of the major features of the past year's work.

Research Projects

1. A survey of Underground Water in the United States has been initiated under the direction of Dr. Harold E. Thomas, who is on leave of absence from the United States Geological Survey. It is expected that this work will be completed by July, 1950.

2. In cooperation with the Food and Agriculture Organization, the Foundation has launched a long-range survey of the incidence and extent of soil erosion in the Western Hemisphere. Work was begun in 1948. The first areas under examination include the whole of North and Central America.

3. Research has been initiated to explore what relationship may exist between soil depletion and human nutrition.

An important step in this direction has been taken by the Foundation in supporting current investigations at the Massachusetts Institute of Technology in which human blood and tissues are examined by spectroscopic and other chemical and physical means to discover the incidence and quantity of trace elements in normal and pathological samples.

4. During the past year the Foundation took an active part in planning the agenda of the United Nations Scientific Conference on the Conservation and Utilization of Resources held at Lake Success

in August and September. It participated actively in this Conference as well as in the first Conference of the International Union for the Protection of Nature held concurrently with the UNSCCUR Conference.

Education

1. Through its support and interest the Foundation has made it possible for Yale University to establish a Chair of Conservation and to offer the degree of Master of Science in Conservation for candidates in the Graduate School. Dr. Paul B. Sears has been appointed Professor of Conservation and courses will commence in the autumn of 1950.

2. In cooperation with the Foundation, the New York State Education and Conservation Departments have undertaken a survey of school curricula and teaching throughout the State to determine the degree and effectiveness of present-day conservation education. When completed, the report should point the way toward far more effective teaching of this subject in the public school system of the State.

3. The Foundation and the New York Zoological Society are collaborating in arranging in-service Conservation courses for city teachers, using as outdoor laboratories only the facilities available in New York City, e.g.: the Zoological Park, Botanical Gardens, Museums.

4. Collaboration between the New York Zoological Society, the State, the City and the Foundation has resulted in commencement of the construction program on the Conservation Exhibit at the Zoological Park.

Publications

During the past year the Foundation has published "Resources Report to Industry" and "A Conservation Handbook."

Films

The following 16mm Kodachrome educational films were made and released by the Foundation:

"The Forest Grows".....	400 feet
"The Forest Produces".....	400 feet
"Conservation of the Forest".....	400 feet

A film for adult audiences, "Yours is the Land," (800 feet) was also released at the close of the year.

THE JACKSON HOLE WILDLIFE PARK
AND THE
JACKSON HOLE BIOLOGICAL STATION
OF THE
NEW YORK ZOOLOGICAL SOCIETY

Jackson Hole, Wyoming

JAMES R. SIMON, *Director*

SEPTEMBER 15 was the official end of a highly successful season at the Jackson Hole Wildlife Park. The new Information Center, a rustic log structure on Highway 287, attracted 76,524 visitors between June and September. The picture window framing Mount Moran, with Elk and Buffalo in the foreground, drew considerable attention and comment. This, in combination with the new road into the Buffalo pasture, added greatly to the Park's popularity which was reflected in articles and accounts in magazines of national circulation.

Film, photographs, decals, postcards, Wildlife Park booklets and Jackson Hole booklets were sold at the Information Center; none of these is the usual type of souvenir; they pertain strictly to the region. Expansion of this activity is planned.

Our 16 mm. sound film has acquainted many people with the Park and its bookings continue. Winter visitors are encouraged to take advantage of scheduled feeding hours when they may ride the hay sled and observe the animals at close range. This is listed as one of the features of the Jackson Hole Winter Carnival program. Highway conditions in the immediate vicinity of the Wildlife Park are being improved steadily and increased interest in the Park may be expected, especially seasonal traffic to and from Yellowstone National Park.

Except for a very sturdy corral designed for capture and loading of Buffalo, no major construction was attempted during 1949 but progress was made in improving existing facilities, including a water system for the laboratory. The corral is used also for feeding small

animals, Antelope, Whitetail Deer and Mule Deer, and is arranged so these animals have free access to feed placed inside while the larger animals cannot enter. This is important because of the aggressive nature of the Buffalo.

On December 8 twenty-nine Elk were released from the Wildlife Park enclosures and on December 11, eleven Buffalo were corralled, loaded and delivered to the Wyoming Game and Fish Department, to be used to establish a new herd in the southern part of the State. The Buffalo represent the increase of two years in the Wildlife Park herd, a remarkable increase considering the youth of the individual animals comprising the original herd of twenty.

The research activity which has been carried on as a part of the Jackson Hole Wildlife Park will in the future center in what will be known as the Jackson Hole Biological Station of the New York Zoological Society. Sixteen persons from ten colleges and universities participated in the 1949 summer research and training program. Studies were made in the fields of bacteriology, behavior, ornithology, limnology, mammalian ecology, aquatic ecology, life histories and population dynamics of mammals, predation, parasitology, serology, mammal distribution, botany and entomology and on a special problem on the Moose. Results of research from the three previous summer programs are beginning to appear in various journals. Reference collections of mammals, birds and plants of the region are nearly complete and collecting in these fields will no longer be stressed. In past years four universities and colleges have accepted the summer field work for credit and this has been established as a regular procedure at the University of Wyoming.

At the time of the transfer of the lands from the Jackson Hole Preserve, Inc., to the United States Government (National Park Service) late in 1949, the Wildlife Park had a newly extended ten-year lease on the properties in use for Wildlife Park purposes. The Wildlife Park lies wholly within the Jackson Hole National Monument.

FACILITIES DEPARTMENT

EDWARD KEARNEY, *Manager of Restaurants*

EDWARD QUINN, *Assistant Manager*

ONE OF THE ZOOLOGICAL PARK's five restaurants, the Central Terrace, was eliminated in 1949 by construction of the Great Apes House approximately on its site. To compensate for this loss, plans were drawn for the enclosure and renovation of the Picnic Pavilion to combine cafeteria and picnic service. New counter and kitchen equipment will be installed, the dining terrace will be enlarged and a large picnic pavilion will be added.

The Zoobar Restaurant was made even more attractive during the summer by the planting of four more trees to shade an open portion of the terrace and the heavy demand on its facilities on peak days will make it necessary to add 25 tables and 100 chairs next summer.

Improvements were made at the Flamingo Terrace Restaurant by the addition of a stainless steel dishwashing and sterilizing unit, complete with a new hot water boiler. Two hundred new, brightly painted chairs were put in operation there, and a kitchen range was replaced.

Three thermostatically-controlled gas ranges have been installed in the Commissary kitchen, with a consequent improvement of economy and efficiency. A new portable refreshment stand was set up at the Farm-in-the-Zoo and five small stainless steel carrettinias, containing dry ice, were added to our ice cream vending fleet so we could service new areas. They added considerable revenue.

Row-boating maintained its popularity and during the winter boats are being added, painted and repaired; 160 will be ready for operation in the spring.

MISCELLANEOUS OPERATIONS AND SERVICES

Children's Zoo

Unusually heavy early season attendance at the Children's Zoo, which opened on April 9, was offset by the adverse conditions of mid-summer. However, Corrine Dalsgaard ended her season on November 13 with a total of 322,419 admissions, only 28,004 less than the record figure of last year.

Riding Tracks

Under the direction of Riding Master Henry Bartels, 168,326 children rode the Dromedaries, Llamas and Donkeys. Two Dromedaries were in service during the year and between them carried 67,497 riders.

Rides at the Pony Track under Ponymaster Edmond Foran numbered 197,794 as against 215,897 for 1948. It is interesting to note that the decrease in pony rides in 1949 occurred during July, August, September and October in conjunction with the infantile paralysis "scare" and paralleled a decrease in Zoo attendance and patronage of other Facilities' operations in the Zoo.

Farm-in-the-Zoo

The Farm-in-the-Zoo reopened under Nelson Miller, Farm Superintendent, on May 7 after having been closed since 1945 because of highway construction. Major renovations by the Construction and Maintenance Department were necessary to put it in first class condition. Despite its relative inaccessibility from the Zoo proper, it enjoyed a popular season. Paid admissions numbered 60,527 and 14,499 schoolchildren were admitted free-of-charge between opening date and closing on November 13. Dairy cattle and a Suffolk mare and mule colt were loaned for the exhibit through the courtesy of:

MR. JOHN C. GILMOUR, JR., Holly Ravine Farm Dairies, Haddonfield, New Jersey; MR. W. R. HALE, Wood Brook Farms, Metuchen, New Jersey; MRS. J. S. JOHNSON, Cedar Lane Farm, Oldwick, New Jersey; MR. WARREN KINNEY, Lee's Hill Farm, New Vernon, New Jersey; and MR. PAUL SPANN, Paul Spann & Sons, Inc., Far Hills, New Jersey.

The remainder of the stock at the Farm is owned by the Society and quartered there the year around.

Production at the Farm compares favorably with previous years and amounted to:

Wool	138 lbs.
Pork	5,200 lbs.
Eggs	1,158 doz.
Poultry	1,266 lbs.

SUMMARY OF ATTENDANCE ZOOLOGICAL PARK

<i>Month</i>	<i>1949</i>	<i>1948</i>
January	96,138	21,424
February	106,364	60,934
March	146,275	149,932
April	325,086	278,034
May	352,448	339,517
June	263,106	272,564
July	331,941	347,930
August	246,607	322,656
September	257,965	299,895
October	228,852	224,010
November	98,129	157,775
December	50,486	45,727
	<hr/>	<hr/>
	2,503,397	2,520,398
Total visitors from November 9, 1899, to December 31, 1949.....		107,004,983

COMPTROLLER'S DEPARTMENT

HERBERT F. SCHIEMANN, *Comptroller*

DURING THE PAST YEAR the Comptroller's Department has continued its program of examination and improvement of systems and practices. Its efforts have been directed toward the attainment of greater proficiency in its assigned duties and the extension of its services and facilities to all other departments. The operation of the New York Zoological Park is complex and one which requires complete adherence to the best of business and administrative practices. In addition to the common problems of most businesses, we, as a zoological park, have our own peculiar problems.

Our diversified seasonal Facilities operation with its thousands of small cash transactions, calls for close supervision and the exercise of internal control which will give reasonable assurance that each dollar of income and outgo has been accounted for. As the Park Facilities operations grow, and their continued growth seems assured, we will find it increasingly necessary to enlarge our present systems of internal control. During the past year we increased our control activities by making field audits of restaurants, cashier booths and locations where cash and inventories are handled. In 1950 we shall enlarge this activity.

This department's operations require a well trained and fully dependable staff of office employees. We are fortunate in having a progressive group of employees who are eager to make our operation a successful one. We have been greatly helped by relatively small turnover.

TREASURER'S REPORTS
For the Year Ended December 31, 1949

CORNELIUS R. AGNEW, *Treasurer*
30 East 40th Street
New York 16, N. Y.

B A L A N C E S H E E T

December 31, 1949

(Except for income on investments which is accounted for in the year received,
this balance sheet is prepared on an accrual basis.)

A S S E T S

Cash:

In banks	\$ 74,951.07	
On hand	<u>3,018.29</u>	\$ 77,969.36

Receivable from the City of New York:

Appropriations for Zoological Park maintenance — calendar year 1949.....		
\$ 538,089.14		
Less — Amount received	<u>476,255.07</u>	61,834.07

Other Receivables	1,954.47
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Inventories	26,667.78
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Investments (approximate market value — \$5,985,951.08).....	5,537,361.82
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Park Facilities Assets — Less depreciation (Note 1):

Improvements to land and buildings in		
Zoological Park	\$ 42,436.23	
Equipment and miscellaneous items....	<u>47,936.32</u>	90,372.55

Prepaid Expenses and Deferred Charges.....	10,177.30
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National Collection of Heads and Horns, Art Gallery, Library and Sundry Items.....	1.00
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Collection of Living Animals.....	1.00
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	<u><u>\$5,806,339.35</u></u>
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LIABILITIES

Accounts Payable and Accrued Expenses.....	\$ 32,024.50
Reserve for Educational and Other Purposes.....	36,958.72

Fund Reserves:

General and other invested funds.....	\$5,397,022.50	
Park Facilities operating fund (Note 1) ..	129,117.50	
Special and custodian funds.....	<u>211,216.13</u>	5,737,356.13
		<u><u>\$5,806,339.35</u></u>

NOTES: 1. Park Facilities assets are subject to an agreement with the City of New York, and the net income from Park Facilities operations may be used only for the purchase of animals and the improvement of Zoological Park.

2. This balance sheet does not include the assets and liabilities of the Pension Fund.

GENERAL AND OTHER INVESTED FUND RESERVES

December 31, 1949

And a Summary of the Changes Therein for the Year Then Ended

	Balance December 31, 1948	Receipts	Total	Expenditures	Balance December 31, 1949
General Invested Fund Reserves:					
General Fund	\$ 347,188.13	\$ 23,839.19	\$ 371,027.32	\$ 284,895.91	\$ 86,131.41
Mary Clark Thompson Fund	2,462,749.75	—	2,462,749.75	1,387.90	2,461,361.85
Anna M. Harkness Fund	1,003,872.60	—	1,003,872.60	565.57	1,003,307.03
Rockefeller Fund	951,698.40	—	951,698.40	536.20	951,162.20
Sage Fund	622,606.74	—	622,606.74	350.88	622,255.86
George F. Baker Fund	102,935.05	—	102,935.05	58.04	102,877.01
Jacob H. Schiff Fund	100,547.98	—	100,547.98	56.79	100,491.19
Mary Thurston Cockcroft Fund	27,554.94	—	27,554.94	15.63	27,539.31
Total General Invested Fund Reserves.	\$5,619,153.59	\$ 23,839.19	\$5,642,992.78	\$ 287,866.92	\$5,355,125.86

Other Invested Fund Reserves:

Cadwalader Animal Fund	\$ 18,764.26	\$ —	\$ 18,764.26	\$ 10.55	\$ 18,753.71
Stokes Bird Fund	4,718.99	—	4,718.99	2.54	4,716.45
Grant Fund for the Protection of Wild Life	18,436.68	—	18,436.68	10.20	18,426.48
Total Other Invested Fund Reserves..	\$ 41,919.93	\$ —	\$ 41,919.93	\$ 23.29	\$ 41,896.64
	\$5,661,073.52	\$ 23,839.19	\$5,684,912.71	\$ 287,890.21	\$5,397,022.50

RESERVE FOR EDUCATIONAL AND OTHER PURPOSES

December 31, 1949

And a Summary of the Changes Therein for the Year Then Ended

	Balance December 31, 1948	Receipts and Appropriation	Total	Expenditures	Balance December 31, 1949
Reserve for Educational and Other Purposes	\$ 46,375.23	\$ 19,431.61	\$ 65,806.84	\$ 28,848.12	\$ 36,958.72

SPECIAL AND CUSTODIAN FUND RESERVES

December 31, 1949

And a Summary of the Changes Therein for the Year Then Ended

	Balance December 31, 1948	Receipts and Appropriations	Total	Expenditures	Balance December 31, 1949
Animal account	\$ 4,104.67	\$ 49,244.93	\$ 53,349.60	\$ 50,976.67	\$ 2,372.93
Conservation account	25,507.87	8,987.91	34,495.78	9,047.11	25,448.67
Conservation films program.....	2,376.73	32,459.50	34,836.23	34,836.23	—
The Conservation Foundation, Inc.....	—	28,716.18	28,716.18	28,716.18	—
William E. Damon Fund.....	11,651.59	622.50	12,274.09	803.03	11,471.06
Anna Fuller Fund.....	—	500.00	500.00	403.79	96.21
DeForest Grant Scientific Research Fund..	3,000.00	1,000.00	4,000.00	3,000.00	1,000.00
Improvement and repair account.....	245.62	25,238.70	25,484.32	25,400.02	84.30
Membership and fund campaign.....	18,084.19	—	18,084.19	17,233.22	850.97
National Cancer Institute.....	10,930.25	19,883.58	30,813.83	20,670.48	10,143.35
Park improvement account.....	7,784.91	115,000.00	122,784.91	119,122.56	3,662.35
Revolving publication account.....	2,927.87	879.46	3,807.33	51.00	3,756.33
Laurance S. Rockefeller — new aquarium or Jackson Hole Wildlife Park, Inc. program	155,227.39	—	155,227.39	5,161.81	150,065.58
Special projects account.....	2,330.51	1,612.50	3,943.01	1,678.63	2,264.38
	<u>\$ 244,171.60</u>	<u>\$ 284,145.26</u>	<u>\$ 528,316.86</u>	<u>\$ 317,100.73</u>	<u>\$ 211,216.13</u>

GENERAL FUND

For the Year Ended December 31, 1949

Balance — December 31, 1948:

General fund	\$ 347,188.13	
Mary Clark Thompson Fund.....	<u>2,462,749.75</u>	
Total		\$2,809,937.88

Add:

Gifts as detailed on page 64.....	\$ 11,845.00	
Life memberships	1,710.00	
Conservation film royalties.....	9,367.54	
Sales of conservation film.....	266.00	
Settlement of insurance claim.....	100.00	
Proceeds from sale of scrap.....	103.94	
Balance from general income account..	<u>446.71</u>	23,839.19
		<u>\$2,833,777.07</u>

Deduct:

Payment of Society's 50% share of the construction of the Great Apes House and associated contracts.....	\$ 225,000.00	
Appropriation for conservation film program	32,459.50	
Final payment on account of appropriation made in 1947 to Jackson Hole Wildlife Park	13,333.33	
Payment on account of appropriation in the amount of \$9,200.00 for the production of eight film strips on the subject of conservation.....	4,000.00	
Payment to the pension fund of Society's contribution for employees over forty-five years of age admitted to the fund in 1949.....	3,330.81	
Payment on account of appropriation in the amount of \$6,000.00 per annum for two years ending May 1, 1951 for operation of the tropical research station at Trinidad, B.W.I..	3,000.00	
Payment for billboard, fiftieth anniversary	2,200.00	
Payment for job classification study...	1,376.75	
Pro-rata share of net loss on sales and redemptions of investments.....	<u>1,583.42</u>	286,283.81

Balance — December 31, 1949:

General fund	\$ 86,131.41	
Mary Clark Thompson Fund.....	<u>2,461,361.85</u>	
Total		<u>\$2,547,493.26</u>

GENERAL INCOME ACCOUNT

For the Year Ended December 31, 1949

Income:

Income from investments — general invested funds.....	\$266,466.94
Annual dues	32,450.09
Sales of publications.....	3,463.58
Miscellaneous income	2,633.54
Total income	<u>\$305,014.15</u>

Expenses:

Actuarial fee	\$ 976.93	
Annual report	2,796.71	
Aquarium research	3,167.13	
Audit fee	1,900.00	
Conservation	20,200.00	
Custodian fees	2,924.00	
Donations	110.00	
Educational activities	9,017.57	
Employee welfare	2,164.26	
Executive office	18,347.86	
Insurance	6,103.43	
Legal fees	2,644.63	
Library	1,220.17	
Members — meetings and services.....	15,926.01	
Pensions:		
Fund contribution—six per-		
cent on salaries of em-		
ployees	\$ 27,920.69	
Auxiliary payments	7,179.54	35,100.23
Photography — salaries and supplies.....		7,413.82
Publication expenses:		
Salaries and other expense. \$	14,698.07	
“Animal Kingdom”	13,840.79	
“Zoologica”	6,769.81	35,308.67
Reception expense	1,984.90	
Traveling expense	1,732.85	
Tropical research	16,366.61	
Miscellaneous expenses	7,946.68	\$193,352.46
Appropriation for reserve for educational and other purposes....		18,000.00
Park maintenance expenditures for the year 1949..	\$631,304.12	
Less — Amount provided by New York City..	538,089.14	
Amount expended by New York Zoological Society....		93,214.98
Balance Carried to General Fund.....		446.71
		<u>\$305,014.15</u>

GIFTS AND GRANTS

Received During the Year 1949

Cancer Research

Anna Fuller Fund.....	\$ 500.00	
National Cancer Institute.....	19,883.58	\$20,383.58

The Conservation Foundation, Inc.

Mrs. Childs Frick.....	\$ 1,000.00	
Childs Frick	15,590.18	
Mrs. Julia Giles.....	20.00	
Helen M. Holland.....	50.00	
Archer M. Huntington.....	2,000.00	
Old Dominion Foundation.....	10,000.00	
Miss Amelia Peabody.....	50.00	
Others (2)	6.00	28,716.18

DeForest Grant Scientific Research Fund

DeForest Grant	1,000.00
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General Fund

Percy Chubb II.....	\$ 100.00	
C. Suydam Cutting.....	1,500.00	
Mrs. Childs Frick.....	1,000.00	
Childs Frick	2,000.00	
Mrs. A. M. Huntington.....	25.00	
Gilbert W. Kahn.....	100.00	
John H. Phipps.....	2,500.00	
George N. Richard.....	2,100.00	
Mrs. E. R. Thayer.....	2,500.00	
Others (2)	20.00	11,845.00

Special Projects

Mrs. E. Gerry Chadwick.....	\$ 100.00	
Miss Ella Mabel Clark.....	50.00	
D. Fortunato	50.00	
Hubert E. and Anne E. Rogers Foundation, Inc.....	250.00	
Gilbert W. Kahn.....	100.00	
David H. McAlpin.....	500.00	
G. J. Guthrie Nicholson.....	100.00	
Magda Merck Sheldon.....	90.00	
Harry Scherman	200.00	
Joseph A. Thomas.....	25.00	
Vivian B. Allen Foundation, Inc.....	25.00	
Others (18)	122.50	1,612.50
		<u>\$63,557.26</u>

PARK FACILITIES STATEMENT OF INCOME AND EXPENSE AND PARK FACILITIES OPERATING FUND

For the Year Ended December 31, 1949

Receipts from Sales at Stands, Restaurants, etc., and from Services \$730,053.91

Less:

Cost of merchandise sold.....	\$228,347.93	
Salaries and commissions.....	302,368.61	
Depreciation	18,606.76	
Other operating and general expenses.....	95,721.01	
Write-off of net book value of restaurant de- molished in 1949.....	3,924.67	648,968.98

Net income for year from sales at stands, restaurants, etc., and from services (see note).....		\$ 81,084.93
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Balance of Park Facilities Operating Fund — December 31, 1948	205,032.57	
		\$286,117.50

Appropriations for park improvements.....	\$115,000.00	
Appropriations for the purchase of animals....	42,000.00	157,000.00

Balance of Park Facilities Operating Fund — December 31, 1949	\$129,117.50	
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NOTE: Park facilities assets are subject to an agreement with the City of New York, and the net income from park facilities operations may be used only for the purchase of animals and the improvement of Zoological Park

THE PENSION FUND
(Founded by Andrew Carnegie)

Statement of Operations for the Year Ended December 31, 1949

Balance December 31, 1948:

Investments (approximate market value — \$689,360.50)	\$661,726.54
Cash	13,730.64
	<u>\$675,457.18</u>

Receipts:

Income from investments:

Interest	\$ 11,766.93
Dividends	18,422.27

Contributions by New York Zoological Society employees (four per cent of employee salaries)	22,301.65
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Contributions by New York Zoological Society (six per cent of employee salaries)	33,450.81
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Special contributions to December 31, 1948 with respect to permanent employees over 45 years of age admitted to the fund in accordance with The Pension Fund regulations as amended June 1, 1949:

Contributions by New York Zoological Society employees \$6,864.14	
Contributions by New York Zoological Society 3,122.50	9,986.64

Interest on special contributions to date of admission to the fund	1,578.80
--	----------

Legacy — Estate of Elwin R. Sanborn	29,253.74	126,760.84
		<u>\$802,218.02</u>

Expenditures:

Refunds on account of resignations	\$ 4,463.30	
Pension disbursements	20,623.86	25,087.16
		<u>\$777,130.86</u>

Loss (net) on Sale of Investments		1,483.47
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Balance December 31, 1949:

Investments (approximate market value — \$820,878.50)	\$752,180.03
Cash	23,467.36
	<u>\$775,647.39</u>

PERMANENT WILD LIFE PROTECTION FUND
BALANCE SHEET
December 31, 1949

Cash — Principal Funds	\$ 923.55
(Held by the New York Zoological Society)	
Investments (approximate market value — \$139,576.88)	122,311.62
Amount of Fund — December 31, 1949	<u>\$123,235.17</u>

BARROW, WADE, GUTHRIE & CO.

ACCOUNTANTS AND AUDITORS

120 Broadway
New York 5, N. Y.

ACCOUNTANTS' REPORT

THE BOARD OF TRUSTEES, New York Zoological Society,
New York, N. Y.

We have examined the balance sheet of the New York Zoological Society as at December 31, 1949, and statements of the transactions of the various funds of the Society and of the Pension Fund for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

We made a test check of the subscriptions, donations and dues reported as received and of the income from investments and found such items to be properly recorded. The securities recorded in the various funds were in agreement with schedules and other supplementary data prepared by the custodians of such securities held for the account of the Society. Bank balances were confirmed directly to us by the depositaries and were reconciled with the respective cash balances recorded in the accounts. We examined approved vouchers and paid checks for a number of representative expenditures.

Park facilities assets are carried in the accounts at net depreciated book amounts as at December 31, 1940 plus subsequent additions, at cost, less retirements. Provision for depreciation from January 1, 1941 to December 31, 1949 has been computed on the resulting book balances.

In our opinion, subject to the comments contained in the previous paragraph, the accompanying balance sheet and statements of transactions of the various funds of the Society present fairly the financial position of the Society at December 31, 1949 on the basis stated therein, and the changes in the funds of the Society for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

BARROW, WADE, GUTHRIE & Co.,
Certified Public Accountants

New York, N. Y.
February 11, 1950.

REPORT OF THE AUDITING COMMITTEE
OF THE
NEW YORK ZOOLOGICAL SOCIETY

TO THE PRESIDENT AND BOARD OF TRUSTEES
of the New York Zoological Society

Dear Sirs:

We have examined the reports of Barrow, Wade, Guthrie & Co. on their examination of the accounts of the New York Zoological Society, the Permanent Wild Life Protection Fund and the Pension Fund of the Society for the year ended December 31, 1949, and herewith submit the same to you as a complete and satisfactory audit of said accounts, including the General and Other Invested Fund Reserves, Special and Custodian Fund Reserves, General Income Account, Pension Fund Account and the Facilities Account. It appears that all expenditures and receipts of the various accounts are fully set forth in these reports, that the cash on hand and in the various depositories has been confirmed and found correct, and that all securities in which the funds of the Society are invested have been satisfactorily accounted for.

Respectfully submitted,

PERCY CHUBB
WILLIAM DEFOREST MANICE
J. WATSON WEBB

March 17, 1950

SUMMARY OF EXPENDITURES, 1896 to 1949, New York Zoological Society and the City of New York, on Account of the Development and Maintenance of the Zoological Park and the Aquarium, Including the Purchase of Collections and Also for the Scientific and General Purposes of This Society.

Year	EXPENDED BY THE CITY OF NEW YORK			FROM GATE RECEIPTS		EXPENDED BY THE NEW YORK ZOOLOGICAL SOCIETY									
	Zoological Park Maintenance	Aquarium Maintenance	Bond Issues a/c Park & Aquarium	Construction and Repairs	Purchase of Animals	Zoological Park Development	Aquarium Improvements	Zoological Park Maintenance	Aquarium Maintenance	Purchase of Animals	Aquarium Specimens	Heads and Horns Collection	Pension Fund Contribution	Library and Paintings	Scientific and General Purposes
1890	.....	.....	.....	.....	.....	\$ 4,213.63	.....	.....	.....	.....	.....	.....	.....	.....	.....
1897	.....	.....	.....	.....	.....	6,424.61	.....	.....	.....	.....	.....	.....	.....	.....	\$ 2,903.74
1898	.....	.....	.....	.....	.....	23,597.80	.....	\$ 1,292.16	.....	.....	.....	.....	.....	.....	4,339.20
1899	\$ 30,000.00	.....	.....	.....	.....	145,495.80	.....	7,038.61	.....	\$ 8,540.72	.....	.....	.....	\$ 102.76	3,476.02
1900	40,000.00	.....	\$125,000.00	.....	\$ 2,470.88	34,626.24	.....	6,189.33	.....	3,784.82	.....	.....	.....	88.13	5,601.78
1901	65,000.00	.....	300,000.00	.....	2,998.80	18,348.61	.....	3,714.37	.....	11,652.24	.....	.....	.....	462.20	7,597.16
1902	85,000.00	\$ 5,959.97	250,000.00	.....	4,256.50	5,908.69	.....	2,757.57	.....	20,983.07	.....	.....	.....	224.73	11,068.69
1903	104,965.00	40,453.68	280,000.00	.....	5,912.95	1,038.20	.....	.....	.....	20,361.62	.....	.....	.....	456.03	13,608.10
1904	104,965.00	46,439.72	315,000.00	.....	5,421.90	1,013.87	.....	1,694.37	.....	14,299.61	.....	.....	.....	887.10	15,072.84
1905	134,965.00	44,968.50	275,000.00	.....	0,849.00	144.00	.....	.....	.....	20,643.40	.....	.....	.....	418.10	18,773.90
1906	144,965.00	44,987.71	250,000.00	.....	8,132.35	778.48	.....	.....	.....	14,907.36	.....	.....	.....	319.10	17,961.67
1907	141,558.75	44,183.87	100,000.00	.....	8,248.65	370.72	.....	.....	.....	10,606.03	.....	\$ 892.71	.....	644.05	15,999.68
1908	154,627.00	44,157.27	65,000.00	.....	9,446.40	232.27	.....	.....	.....	4,231.61	.....	735.77	.....	1,313.87	14,693.92
1909	162,325.00	45,971.44	10,000.00	.....	9,992.75	2,860.92	.....	.....	.....	9,734.43	.....	7,340.82	.....	609.50	17,168.95
1910	167,632.00	45,974.86	89,500.00	.....	9,909.90	5,918.35	.....	.....	.....	4,339.25	\$ 973.90	2,030.39	.....	1,021.87	20,627.77
1911	174,632.00	47,560.21	155,000.00	.....	11,011.15	1,155.00	.....	.....	.....	6,659.89	1,191.80	1,615.38	.....	1,221.26	23,409.39
1912	182,365.00	46,597.08	.....	.....	11,838.40	40.00	.....	.....	.....	22,750.18	1,350.03	556.94	.....	1,031.55	32,109.01
1913	191,925.00	47,335.62	29,100.00	.....	12,404.25	218.45	.....	.....	.....	10,665.57	1,850.25	486.00	.....	732.97	32,543.88
1914	200,000.00	46,995.53	.....	\$ 9,237.81	3,831.15	2,175.13	.....	.....	.....	22,590.44	1,792.99	338.73	\$3,333.33	3,541.15	28,246.12
1915	200,000.00	46,991.66	21,425.00	9,175.86	.....	887.88	.....	.....	.....	13,629.41	1,466.64	1,024.91	8,000.00	4,181.24	31,398.08
1916	197,074.35	46,996.43	.....	9,599.81	.....	425.30	.....	.....	.....	13,511.12	2,193.57	1,031.47	8,000.00	1,555.12	38,339.99
1917	199,560.00	46,903.01	.....	3,488.31	7,118.90	1,450.05	.....	11,537.79	.....	10,175.70	1,637.15	18.12	8,000.00	2,869.20	44,262.48
1918	207,586.00	45,630.71	.....	2,642.70	.....	48.12	.....	1,580.00	\$ 93.61	8,425.92	960.19	18.61	8,000.00	3,559.85	34,125.49
1919	190,000.00	45,000.00	5,000.00	4,917.84	.....	.....	\$ 3,450.00	19,924.00	407.07	13,345.59	1,028.05	88.27	8,000.00	1,442.07	45,599.71
1920	250,098.27	53,971.48	15,000.00	17,438.28	.....	5,007.00	4,095.03	5,141.92	.....	32,761.08	1,654.02	263.86	8,000.00	2,517.64	51,016.20
1921	276,951.01	65,203.12	86,000.00	25,463.77	.....	88,734.92	53,635.02	6,068.17	976.47	27,442.59	2,165.05	2,601.67	8,000.00	4,698.24	55,684.15
1922	204,618.05	63,341.26	25,000.00	17,060.00	.....	50,888.05	16,153.03	10,074.88	3,326.28	43,047.41	3,057.91	7,191.93	8,000.00	1,765.78	58,797.69
1923	262,724.50	57,166.63	.....	18,388.20	.....	5,000.00	.....	19,019.09	3,319.44	24,456.20	1,432.89	1,550.69	8,000.00	3,391.96	58,404.21
1924	262,471.01	57,319.20	7,970.00	16,806.00	.....	.....	28,233.45	28,956.34	8,097.14	11,560.62	2,013.88	942.34	8,000.00	1,938.77	76,559.41
1925	262,808.69	58,324.89	85,000.00	19,974.05	.....	.....	.....	38,793.01	4,380.45	20,843.01	2,609.55	607.78	8,000.00	1,174.24	242,753.89
1926	273,815.12	62,266.20	1,500.00	20,102.90	.....	.....	.....	45,467.10	7,261.21	23,460.04	2,847.35	306.32	8,000.00	562.40	87,915.27
1927	276,855.19	65,216.89	.....	18,960.48	.....	.....	1,395.00	61,968.22	11,656.97	27,545.92	2,861.55	135.00	8,000.00	2,477.37	82,807.54
1928	319,380.50	88,109.12	.....	18,106.25	.....	2,480.06	.....	52,676.35	10,776.84	21,001.88	2,912.97	107.89	8,000.00	1,168.15	88,794.37
1929	338,359.00	71,229.35	100,000.00	21,957.80	.....	13,095.54	984.85	59,673.38	13,670.81	23,783.69	3,572.14	669.48	8,000.00	4,029.63	122,774.78
1930	350,170.92	81,343.46	50,000.00	20,834.91	.....	2,500.89	375.00	65,600.39	16,966.30	17,492.92	1,355.56	639.04	10,000.00	2,726.37	134,278.88
1931	349,344.95	76,408.08	.....	14,890.58	.....	5,131.68	.....	65,601.03	19,541.40	24,439.56	3,650.58	1,707.40	10,000.00	6,713.26	128,871.12
1932	337,490.01	76,071.24	.....	16,710.25	.....	1,852.40	.....	61,127.48	19,155.01	20,039.28	1,934.84	335.00	10,000.00	3,607.97	97,303.32
1933	268,633.38	67,814.24	5,422.63	13,961.02	.....	.....	.....	62,996.66	18,120.73	7,644.14	2,199.91	118.65	10,000.00	3,384.38	86,757.06
1934	257,423.08	65,806.61	.....	11,025.88	.....	1,037.19	.....	66,502.59	18,229.23	9,267.86	1,641.06	162.86	10,000.00	606.53	81,711.26
1935	205,630.94	68,203.46	.....	11,596.51	.....	.....	.....	60,237.94	18,832.57	16,530.28	2,031.56	275.21	10,000.00	383.07	82,929.14
1936	265,057.37	68,760.95	.....	13,496.42	.....	100.00	.....	57,270.94	17,886.45	20,918.46	2,867.50	178.43	10,000.00	470.18	79,835.73
1937	267,192.29	73,807.74	.....	11,527.85	.....	.....	.....	56,262.45	16,408.55	22,417.08	2,799.17	24.79	19,047.09	1,415.39	92,609.40
1938	282,759.71	79,225.20	.....	10,235.70	.....	.....	.....	57,043.10	13,408.11	15,351.51	558.82	.....	20,455.95	431.41	93,513.59
1939	283,280.81	79,164.23	.....	11,019.23	.....	.....	.....	51,050.57	12,941.70	23,012.27	403.75	175.00	20,475.95	345.30	92,576.90
1940	282,761.15	78,905.12	.....	8,392.10	.....	102,343.87	.....	57,513.25	12,022.76	39,627.52	577.10	.....	20,069.17	533.85	98,501.09
1941	286,284.59	62,052.95	.....	15,947.33	.....	187,408.02	.....	84,254.19	9,466.70	57,236.77	574.40	.....	18,206.34	1,316.89	100,846.55
1942	258,656.76	50,931.00	.....	10,169.20	.....	43,088.43	.....	49,226.40	4,807.79	8,369.36	553.52	.....	10,762.57	401.65	144,765.21
1943	305,203.23	33,324.31	.....	11,904.80	.....	38,860.03	3,500.00	51,833.51	5,154.21	2,319.36	336.19	.....	9,832.98	574.01	73,192.91
1944	315,787.82	33,790.82	.....	17,316.09	.....	32,101.60	23,420.00	50,691.82	3,717.28	5,106.59	96.48	.....	10,234.06	405.52	88,594.55
1945	334,288.37	38,158.81	.....	20,745.35	.....	58,846.39	225.52	58,846.39	5,928.38	11,466.19	460.34	.....	12,681.89	1,001.92	112,541.29
1946	366,113.74	42,654.03	.....	24,688.34	.....	122,388.48	*34,997.55	62,439.25	6,742.70	43,037.09	172.30	.....	14,238.14	741.14	168,881.41
1947	440,147.60	40,285.01	.....	22,665.64	.....	101,392.80	*19,669.26	85,294.53	8,715.67	71,342.79	687.91	.....	15,751.26	690.03	348,442.82
1948	469,638.83	38,564.40	.....	30,690.08	.....	93,683.84	116.71	83,652.16	9,419.90	26,461.29	470.63	.....	16,708.48	1,004.40	346,222.76
1949	497,900.12	40,189.02	.....	25,400.02	.....	344,122.56	*4,203.50	82,044.22	11,170.76	50,408.80	1,370.90	.....	31,251.50	1,220.17	333,513.75
Add Premium on Bonds, less Balances Reverting to the City															35,559.89
Expended in Connection with Preparation and Publication of "A Monograph of the Pheasants" — Gift of Col. Anthony R. Kuser															194,100.00
Expended in Connection with Calapagos Expedition — Gift of Harrison Williams															98,670.00
Transfer by the Society of Endowment for Pension Fund—July 1, 1941															239,523.45
Totals	\$12,350,992.11	\$ 2,629,716.72	\$ 2,681,477.52	\$556,537.36	\$120,443.93	\$1,557,533.56	\$194,453.92	\$1,653,255.53	\$312,602.49	\$1,014,529.04	\$64,314.40	\$34,297.46	\$652,572.16	\$78,379.65	\$4,483,126.12
				\$17,662,186.35		\$676,981.29		\$10,044,764.33							

The Society has paid \$40,000.00 to the City, half of which is to be applied to architects' fees for plans for development of the Zoological Park, the other half for architects' fees for plans for the proposed new Aquarium. The City has appropriated an aggregate of \$80,000.00 for the same purposes.
 * Includes expenditures in respect of proposed new aquarium.

NEW YORK ZOOLOGICAL SOCIETY

INCORPORATION of the New York Zoological Society by the State of New York was accomplished under Chapter 435 of the Laws of 1895 and the basic purposes of the Society were embodied in Section 2:

Said corporation shall have power to establish, maintain and control zoological parks, gardens, or other collections for the promotion of zoology and kindred subjects, and for the instruction and recreation of the people. Said corporation may collect, hold, and expend funds for zoological research and publication, for the protection of wild animal life, and for kindred purposes, and may promote, form, and co-operate with other associations with similar purposes, and may purchase, sell, or exchange animals, plants, and specimens appropriate to the objects for which it was created.

Subsequently, at a special meeting of the Commissioners of the Sinking Fund, City of New York, held on March 24, 1897, a resolution was passed allotting South Bronx Park for the use of the New York Zoological Society and establishing the terms of a management agreement under which the Society has operated since that date, with only minor modifications.

The resolution of March 24, 1897, and the supplemental agreement of January 24, 1942, provided that the Society should furnish the original equipment of buildings and animals, that it should raise \$250,000 by subscription within three years of the date of starting work on the improvement of the grounds, that the Society should have the right to establish an endowment fund to be used solely for the general uses and purposes of the Society unless otherwise specified by the donors, that the City of New York should provide funds for the maintenance and care of the Zoological Park and for the maintenance of the animal collections, that the Zoological Park should be open to the public free at least four days a week, that the Society may expend the net proceeds of facilities only for the purchase of animals and the improvement of the Zoological Park and that the Society should have the right to make and control all appointments of employees and to fix salaries and make promotions.

NEW YORK ZOOLOGICAL SOCIETY

Organized 1895

Presidents

I. ANDREW H. GREEN.....	1895 to 1897
II. LEVI P. MORTON.....	1897 to 1909
III. HENRY FAIRFIELD OSBORN.....	1909 to 1925
IV. MADISON GRANT.....	1925 to 1937
V. W. REDMOND CROSS.....	1937 to 1940
VI. FAIRFIELD OSBORN.....	1940

First Vice-Presidents

I. J. HAMPTON ROBB.....	1895 to 1897
II. HENRY FAIRFIELD OSBORN.....	1897 to 1909
III. SAMUEL THORNE.....	1909 to 1916
IV. MADISON GRANT.....	1916 to 1925
V. FRANK K. STURGIS.....	1925 to 1932
VI. W. REDMOND CROSS.....	1932 to 1937
VII. KERMIT ROOSEVELT.....	1937 to 1939
VIII. ALFRED ELY.....	1939

Second Vice-Presidents

I. CHARLES E. WHITEHEAD.....	1895 to 1902
II. JOHN L. CADWALADER.....	1902 to 1915
III. MADISON GRANT.....	1915 to 1916
IV. FRANK K. STURGIS.....	1916 to 1925
V. HENRY D. WHITON.....	1925 to 1930
VI. KERMIT ROOSEVELT.....	1930 to 1937
VII. ALFRED ELY.....	1937 to 1939
VIII. LAURANCE S. ROCKEFELLER.....	1939

Treasurers

I. L. V. F. RANDOLPH.....	1895 to 1901
II. CHARLES T. BARNEY.....	1901 to 1903
III. PERCY RIVINGTON PYNE.....	1903 to 1922
IV. CORNELIUS R. AGNEW.....	1922

Secretaries

I. MADISON GRANT.....	1895 to 1925
II. WILLIAM WHITE NILES.....	1925 to 1935

III. FAIRFIELD OSBORN	1935 to 1940
IV. HAROLD J. O'CONNELL.....	1941

Chairmen, Executive Committee

I. CHARLES E. WHITEHEAD.....	1895 to 1896
II. HENRY FAIRFIELD OSBORN.....	1896 to 1903
III. CHARLES T. BARNEY.....	1903 to 1907
IV. HENRY FAIRFIELD OSBORN.....	1907 to 1909
V. MADISON GRANT	1909 to 1937
VI. W. REDMOND CROSS.....	1937 to 1940
VII. LAURANCE S. ROCKEFELLER.....	1940 to 1943
VIII. FAIRFIELD OSBORN	1943 to 1945
IX. LAURANCE S. ROCKEFELLER.....	1945

Directors

I. WILLIAM T. HORNADAY, <i>Zoological Park</i>	1896 to 1926
II. CHARLES H. TOWNSEND, <i>New York Aquarium</i>	1902 to 1937
III. W. REID BLAIR, <i>Zoological Park</i>	1926 to 1940
IV. ALLYN R. JENNINGS.....	1940 to 1941
V. CHARLES M. BREDER, JR., <i>New York Aquarium</i>	1937 to 1943

BOARD OF TRUSTEES

City of New York

Ex-officio

HON. WILLIAM O'DWYER, *The Mayor*

HON. ROBERT MOSES, *Commissioner of Parks*

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ALFRED ELY, LAURANCE S. ROCKEFELLER & DONALD T. CARLISLE,
Vice-Presidents

HAROLD J. O'CONNELL, *Secretary*

CORNELIUS R. AGNEW, *Treasurer*

General Office: 30 East 40th Street, New York 16, N. Y.

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ALFRED ELY	ROBERT MOSES
DE FOREST GRANT	HAROLD J. O'CONNELL, <i>ex officio</i>
WARREN KINNEY	FAIRFIELD OSBORN, <i>ex officio</i>
WILLIAM DE FOREST MANICE	J. WATSON WEBB

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HERBERT KNOBLOCH, *Associate in Charge, Education*
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BRAYTON EDDY, *Curator of Reptiles & Insects*
LEONARD J. GOSS, *Veterinarian*
GRACE DAVALL, *Assistant to General Curator*
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EDWARD KEARNEY, *Manager, Facilities Department*

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MYRON GORDON, *Geneticist*
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HENRY FLEMING, *Entomologist*
Associates
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 Gordon, Albert H.
 Graf, William
 Grant, Mrs. DeForest
 Graustein, Archibald R.
 Graves, Henry, Jr.
 Gray, Mrs. Thomas H., Jr.
 Grew, Mrs. Edward W.
 Griswold, Mrs. John S.
 Hadley, Morris
 Halsted, Mrs. Harbeck
 Hamblen, Harold E.
 *Hammond, John Henry
 Harrison, J. R.
 Hart, Stanley
 Hathaway, Stewart S.
 Hatvany, Miss Antonia
 Hayes, Miss Irene
 Head, Edward Barry Nugent
 Helme, Edward
 Hesse, Mrs. H. G.
 Hewitt, Mrs. Thomas D.
 Heyd, Dr. Charles Gordon
 Hillman, Harry R.
 Hinman, Mrs. Edward
 Hird, Miss Martha
 Hird, Miss Mary E.
 Hitchcock, Mrs. Ethan A.
 Hoagland, Mrs. Joseph C.
 Hoffman, John E.
 Holmes, Howard A.
 Holmes, John Clark
 Holmes, Mrs. Margot A.
 Hooper, John W.
 Howell, W. Hunting
 Hubbard, William H.
 Hun, Samuel Hand
 Huntington, Miss Elizabeth Q.
 Huntington, Mrs. George H.
 Hutchins, Mrs. Waldo, Jr.
 James, Mrs. Bayard
 *Jennings, Mrs. Walter
 Johnson, Mrs. Wayne
 Jungmann, Miss A. M.
 *Kean, John
 Kean, Mrs. John
 Kehoe, Arthur H.
 Keil, Henry F.
 Kerr, Lewis S., Jr.
 Keuffel, Mrs. W. G.
 *Kinsey, Harold C.
 Kissel, Mrs. W. Thorne
 Kleitz, William L.
 Knauth, Victor W.
 Kollstede, Charles A.
 Krumb, Henry

Deceased

Lamm, Mrs. Gustav H.
 Lamont, Mrs. Corliss
 Laurence, Townsend
 Leale, Loyal
 LeFebvre, Dr. Serge
 Lennox, Robert W.
 Leonhardt, Frederick H.
 Lerch, F. H., Jr.
 Levi, Julian Clarence
 Lichtenstein, Oscar R.
 Littell, Robert
 Lockwood, Luke B.
 Logan, Miss Florence L.
 Long, John E.
 Lyeth, J. M. Richardson
 Mack, Mrs. Bertha
 Madigan, Mrs. Thomas F.
 Marks, Carl
 Marshall, Walter P.
 Martin, H. Bradley
 Martin, Herbert
 Matthews, Mrs. Flagler
 McGee, Clifford W.
 McKee, Robert E.
 McKelvy, Mrs. Robert
 McLane, Huntington
 McNulty, Harold C.
 McQuillen, Paul W.
 Meade, George P.
 Mellon, Mrs. Charles Henry
 Melville, Ward
 Merrill, Charles E.
 Merritt, Walter Gordon
 Miller, Amos B.
 Moore, George G., Jr.
 Morrison, David C.
 Naumburg, Mrs. Walter W.
 Newton, Arthur L.
 Nichols, Mrs. Morton C.
 Nyselius, Gustav
 Openhym, George J.
 Otto, Elmer C.
 Paul, Charles
 Peabody, Miss Amelia
 Peck, A. Wells
 Peck, Miss Mary L.
 Perkins, Mrs. George W.

Perkins, Miss Jane M.
 Phelps, Ansel
 Pollard, L. Douglas
 Poor, Mrs. Walter S.
 Potts, Charles E.
 Powers, Thomas Harris
 Pratt, H. Irving
 Prentice, Mrs. Sheldon
 Prentice, Mrs. Spellman
 Proctor, J. Riker
 Randolph, Mrs. Francis F.
 Richard, Harold C.
 Richards, Mrs. Lloyd
 Riegel, Mrs. Benjamin DeWitt
 Ritchie, Alfred A.
 Rockefeller, William A.
 Roessel, Mrs. M.
 Rosenfeld, Ernest
 Rosin, Mrs. Katherine S.
 Roth, Mrs. William P.
 Rust, Adolf H.
 Rutherford, Mrs. John
 Ryle, Miss Julia
 Sargent, Miss Kathrine A.
 Scherman, Mrs. Harry
 Schlageter, Miss Laura
 Schleissner, Otto
 Schwarz, Herbert F.
 Scribner, Master Charles T.
 Scudder, Miss Antoinette
 Shanahan, T. J.
 Sheldon, Miss Harriette C.
 Sieverman, Frank A.
 Sloane, John
 Smillie, Ralph
 Smull, Mrs. J. Barstow
 Sonfield, Charles
 Spalding, H. Boardman
 Spooner, Ray Newhall
 Sprague, Raymond
 Stack, James A.
 Stanley, Mrs. Robert C.
 Stanley, Samuel F.
 Statham, Noel
 Stebbins, Mrs. Horace C.
 Storck, Henry F.
 Straus, Donald B.

Stuyvesant, Peter
 Surkamp, Arthur
 *Swaine, Robert T.
 Sweet, William L.
 Swift, Mrs. Edward F., Jr.
 Tenny, Daniel G.
 Terry, Paul H.
 Thayer, Mrs. Robert H.
 Thomas, David C.
 Thomas, Joseph A.
 Thorne, Oakleigh Lewis
 Timolat, James G., Jr.
 Titus, Mrs. Robert R.
 Todd, Mrs. Russell W.
 Tozzer, Mrs. Alfred M.
 Tucker, Carl
 Tucker, Mrs. Carl
 Tunick, Walter B.
 Turner, Lewis
 Upham, Mrs. John P.
 Van Dyke, Mrs. Tertius
 von Stade, Mrs. F. Skiddy
 Vretta, Carl
 Vuilleumier, Dr. J. A.
 Wagstaff, Mrs. David
 Waldes, Milo
 Walker, Miss Miriam Dwigth
 Walton, Rudolph L.
 Wanek, Mrs. Anna N.
 Waterman, Robert E.
 Weaver, Mrs. William B., Jr.
 Wendell, Arthur R.
 Whitman, Bret Harte, Jr.
 Willetts, Mrs. William P.
 Williams, Dr. Byard
 Williamson, Clifton P.
 Willis, Edward Thomas, Jr.
 Winthrop, Robert
 Wolff, Henry J.
 Wood, Ernest N.
 Wright, Mrs. Claire R.
 Wright, Harrison
 Wright, John S.
 Wright, Mrs. W. L.
 Young, Roland Keith
 Zabriskie, Christian A.
 Zietz, William

Annual Members

Aaron, Jack
 Abbott, Cyril E.
 Abbott, Mrs. Theodore J.
 Abella, Luis, Jr.
 Abeloff, Dr. Abram J.
 Aberg, William J. P.
 Abraham, Miss Rae
 Abrahams, Henry B.
 Abrahams, Michael M.
 Abramovitz, Max
 Achelis, John Fritz
 Acheson, A. Glen
 Acker, Howard C.
 Adams, Charles E.
 Adams, Frederick B.
 Adams, John C.
 Adams, Dr. Warren S.
 Adams, William B.
 Addalia, Miss Anne
 Adee, Mrs. Ernest R.
 Adee, George T.
 Adelson, Richard H.
 Adkins, Leonard D.
 Adler, Siegmund
 Adrian, Gilbert
 Agathon, Oshin
 Agnew, C. R., Jr.
 Agnew, Mrs. Cornelius R.
 Albert, Daniel A.
 Albright, Horace M.
 Aldrich, Dr. H. B.
 Aldrich, Winthrop W.
 Alexander, Miss Helen D.
 Alexandre, Miss Anna R.
 Alker, Mrs. Heyward R.
 Allen, Miss Betsy
 Allen, Charles, Jr.
 Allen, Charles W.
 Allen, Mrs. Frederick L.
 Allen, Philip K., Jr.
 Allen, Mrs. Philip R.
 Allen, Vincent R.
 Allyn, Stanley C.
 Alsleben, Alfred A.
 Amend, Carl G.
 Amos, Charles L.
 Amos, L. C.
 Anderson, Miss Barbara
 Anderson, George A.
 Anderson, Mrs. L. Warren

Deceased

Anderson, Robert C.
 Anderson, Mrs. Walter J.
 Anderson, Mrs. William
 Andrews, De Lano
 Andrews, Dr. George Clinton
 Andriesse, Albert
 Ansbacher, David A.
 Antopol, Dr. William
 Appleton, Francis R., Jr.
 Arkell, William C.
 Arkush, Reuben
 Armour, William
 Armstrong, Dr. Edward McP.
 Armstrong, George S.
 Armstrong, James F.
 Arnheim, Alvin J.
 Arnold, Miss Anna Louisa
 Arnold, Mrs. William B.
 Aron, Jack R.
 Aronson, Bernard
 Asch, David
 Ash, William J.
 Assmuth, Rev. Joseph
 Atkinson, Mrs. John R.
 Atran Foundation
 Atz, Mrs. L. A.
 Aubry, Mrs. Jules W.
 Auchincloss, C. C.
 Auchincloss, Mrs. Edgar S.
 Auchincloss, Dr. Hugh, Jr.
 Auerbach, Master Philip Hone
 Aufrecht, Dr. Gustave
 Averett, Mrs. Elliott
 Avery, Miss Myrtilla
 *Avinoff, Andrey
 Axelrad, Dr. Joseph
 Ayers, Mrs. Alfred B.
 Ayers, Miss Isabelle M.
 Aylward, David A.
 Bache, Harold L.
 Backer, George
 Backes, Miss Katharine
 Bacon, Mrs. Carter S.
 Bacon, Charles E.
 Bacon, Mrs. Francis McNeil
 Bacon, Rogers H.
 Baer, William B.
 Bagger, Miss Mabel E.
 Bahnsen, Mrs. Henry
 Bahr, Miss Alma

Bailey, Percy Laurance, Jr.
 Bailey, Dr. Samuel P.
 Bailey, Theodore L.
 Baker, Dr. Alice T.
 *Baker, Grenville K.
 Baker, Hugh B.
 Bakhmeteff, Boris A.
 Balaban, A. J.
 Baldwin, Mrs. Robert Howe
 Baldwin, Mrs. William H.
 Ball, Herman F.
 Ball, Robert E.
 Ballantine, Arthur A.
 Ballentine, Mrs. Albert W.
 Ballard, Miss Amy Hope
 Balsam, Michael
 Bancroft, Miss Constance J.
 Bandler, William A.
 Bangs, Francis N.
 Banks, Mrs. William Foster
 Barber, John T.
 Barber, Thomas H.
 Barbour, Mrs. Alexander L.
 Barker, Dr. Clinton R.
 Barnard, J. Augustus
 Barnes, Courtlandt D.
 Barnes, Howel H., Jr.
 Barnett, Vincent G.
 Barrer, Lester A.
 Barrett, Mrs. G. Hinman
 Barrett, William Felton
 Barrie, George N.
 Barrow, Archibald
 Barrows, Miss Frances H.
 Bartlett, Edwin D.
 Bartlett, L. M.
 Bartol, Henry G.
 Bartram, Miss Evelyn
 Basch, Mrs. Walther R.
 Basner, Austin E.
 Bass, Dr. Murray H.
 Bates, Mrs. William Graves
 Battey, William Earle
 Bauer, Leo
 Bauman, Edgar
 Bauman, Mrs. Edgar
 Baxter, Mrs. Hugh H.
 Beach, Charles A.
 Beach, Edwin E.
 Beach, Miss Judy

Beach, William N.
 Beadel, Henry L.
 Beadleston, Miss Edith
 Beal, George J.
 Beal, Mrs. Gerald F.
 Beals, John D., Jr.
 Beard, Louis Arnold
 Beard, Stanley D.
 Beardsley, Randolph H.
 Becker, Edward L.
 Becker, Rudolph
 Becket, G. Campbell
 Beekman, Mrs. Charles Keller
 Beekman, Dr. Fenwick
 Begg, Mrs. William R.
 Begrisch, Frank W.
 Behringer, Miss Jane
 Bell, William B.
 Bellamy, Mrs. F. Wilder
 Beller, A.
 Beller, William C.
 Belmont, Mrs. August
 Belth, Herman
 Bendiner, Alan
 Bendixsen, A.
 Benedict, Elliot S.
 Benet, Miss Marjorie Flack
 Benjamin, Mrs. William M.
 Benkard, Franklin
 Bennett, Irl E.
 Bennett, Lawrence
 Bennett, Robert W.
 Bent, Miss Mildred
 Benziger, Bruno
 Berch, Barnett
 Berg, Mrs. Hunter
 Bergen, Dr. Catharine
 Bergh, Mrs. Roland C.
 Berk, David
 Berk, Irving
 Berlinger, Joseph F.
 Bernard, Dr. Richard
 Bernhard, Richard J.
 Bernheim, George B.
 Bernheim, Mrs. Henry J.
 Bernheimer, Sidney G.
 Berns, Charles A.
 Best, Mrs. Charles B.
 Betts, Master Charles
 Betts, Master Wylls
 Biddle, Clement M.

Bidwell, Master
 Miles Oakley, Jr.
 Bierman, D. H.
 Binder, Edwin A.
 Bingham, Arthur W., Jr.
 Bingham, Mrs. Harry Payne, Jr.
 Birch, Mrs. John F.
 Birchall, Miss Katharine H.
 Birchell, Mrs. Frederick T.
 Bird, S. Hinman
 Bird, Mrs. S. Hinman
 Birdseye, Miss Mary Platt
 Bishop, Mrs. Francis C.
 Bishop, Mrs. Morris
 *Bispham, George Tucker
 Blackham, Wilfrid
 Blackstone, Mrs. F. Gordon
 Blagden, Mrs. F. Meredith
 Blain, Dr. Alexander W.
 Blair, Miss Rosanne
 Blake, Master Charles H.
 Blake, Frederick H.
 Blanco, Juan Carlos, Jr.
 Bliss, Anthony A.
 Bliss, Mrs. Cornelius N.
 Bliss, Miss Susan D.
 Bliss, Mrs. Walter P.
 Blodgett, Alden S.
 Blodgett, Thomas H.
 Blond, Abraham
 Bloomingdale, Samuel J.
 Blossom, Mrs. Dudley S., Sr.
 Blount, Robert E.
 Blum, Mrs. Alexander
 Blum, Mrs. Richard
 Boardman, Mrs. Bradford
 Boardman, Kenneth
 Boardman, Mrs. Kenneth
 Boardman, Miss Rosina C.
 Bocher, Main
 Bode, William A.
 Boese, Mrs. Quincy Ward
 Bogert, Marston T.
 Boggs, Mrs. Dorothy G.
 Böhlke, James
 Boissevain, Adolphe
 Boles, Mrs. Constance B.
 Boley, John
 Bolie, Miss Pearl B.
 Bolton, Miss Ella F.
 Bond, Mrs. Stephen N.

Bonfig, H. C.
 Bonham, Frederick T.
 Bontecou, Jesse M.
 Booth, Mrs. Robert Cyrus
 Booth, Willis H.
 Borden, Albert Greene
 Borden, Mrs. John C.
 Borden, Richard
 Borg, Mrs. Sidney C.
 Borgstede, Miss J. Dorothy
 Bori, Miss Lucrezia
 Borish, Mrs. M. E.
 Boswell, Stanley B.
 Botzow, Mrs. William G. F.
 Bourne, Miss Grace E.
 Bowdoin, George Temple
 Boyer, Mrs. Philip, Jr.
 Boyer, Robert C.
 Boyles, James M.
 Braaten, Arthur P.
 Brace, Donald C.
 Bradford, Mrs. A. H.
 Bradley, Miss Nora
 Brady, Mrs. Bertha C.
 Braga, George A.
 Brain, William
 Brams, Dr. William M.
 Brand, Mrs. Albert R.
 Brandi, Frederic H.
 Brassard, Dr. J. A.
 Bratter, Edward M.
 Breed, Dr. Eben
 Breitenbach, Julius M.
 Breuchaud, Jules R.
 Brewster, Miss Diana
 Brewster, Mrs. William
 Brice, Mrs. Helen E.
 Brick, George H.
 Briggs, Mrs. Berta N.
 Brigham, George J.
 Britton, Miss Marguerite
 Britwitz, Louis
 Brody, Barnie
 Bromfield, Louis
 Brophy, Charles B.
 Brown, Mrs. Archibald M., Jr.
 Brown, Caxton
 Brown, Charles S.
 Brown, Clyde, Jr.
 Brown, Miss Cornelia Clifford
 Brown, Miss Edith Harmon

Brown, Floyd deL.
 Brown, Mrs. Franklin Q.
 Brown, Grover C.
 Brown, Major James
 Brown, James M.
 Brown, James Oliver
 Brown, Miss Kathryn E.
 Brown, Robert A.
 Brown, Samuel
 Brown, Vernon H.
 Browne, Gilbert G.
 Browne, Mrs. Gilbert G.
 Browne, Robert
 Bruce, Miss Audrey
 Bruell, Frederick
 Brundin, Y. Pierre
 Bryant, Miss Penny
 Bryce, Miss Mary T.
 Bryer, Jackson R.
 Buck, Ellsworth B.
 Buckbee, George E.
 Buckley, Jere D.
 Budd, Kenneth P.
 Budell, Alfred E.
 Bugbee, Mrs. Henry G.
 Bulkley, David Tod
 Bulkley, Mrs. David Tod
 Bulkley, Edwin M.
 Bulkley, J. Ogden
 Bull, Mrs. Ludlow
 Bull, Miss Margaret E.
 Bullock, Mrs. Hugh
 Bunim, David
 Burbank, Dr. Reginald
 Burch, Mrs. Lowell R.
 Burden, Mrs. I. Townsend, Jr.
 Burden, James A.
 Burden, Mrs. William A. M.
 Burdett, Dr. Fletcher H.
 Burgard, Frederick W.
 Burger, Joseph P.
 Burgess, Thornton W.
 Burghardt, Alfred
 Burke, Mrs. Brewster
 Burke, E. Lowell
 Burkhardt, Master Edward A.
 Burkman, Charles H.
 Burlingame, Mrs. Frederic A.
 Burlingham, Charles
 Burlingham, Mrs. Charles
 Burlingham, Charles C.
 Burlington, Miss Mildred

Deceased

Burnett, Mrs. R. Peyton
 Burns, Kenneth
 Burpee, George W.
 Burstein, Clarence
 Burt, Clayton R.
 Burten, Irving
 Burton, Howes
 Burton, John H.
 Bush, James I.
 Bushnell, Mrs. Ericsson F.
 Busk, Joseph R.
 Butler, Arthur W.
 Butt, John D.
 Butterfield, Miss Alice D.
 Butterworth, Mrs. F. S.
 Button, Miss Judith
 Byng, Mrs. Henry G.
 Cable, William E., Jr.
 Cacchione, Mario R.
 Cady, Mrs. Harrison
 Caffyn, Harold R.
 Cahn, Mrs. Phyllis H.
 Calendo, Miss Antoinette B.
 Callan, William
 Callery, Miss Roberdeau
 Cameron, Kirk L.
 Camhi, Meyer
 Cammann, Mrs. H. Schuyler
 Camp, Frederic E.
 Campbell, Donald
 Campbell, Miss Florence A.
 Campbell, Mrs. Joseph
 Campbell, Mrs. Marta P.
 Cannon, Dr. A. Benson
 Cannon, Mrs. Joseph M.
 Cannon, Mrs. C. Madison, Jr.
 Carey, Mrs. Andrew Galbraith
 Carey, Drew
 Carley, James
 Carlisle, Donald T.
 Caron, Kenneth
 Carpenter, William M.
 Carriker, Dr. Melbourne
 Carson, Mrs. J. Henry
 Carter, Ernest T.
 Cary, Mrs. C. Reed
 Casamajor, Dr. Louis
 Casamajor, Miss Martha
 Case, Charles Anderson
 Castleberry, Mrs. C. Albert
 Cates, Louis S.
 Cattell, Jacques

Cattell, Dr. McKeen
 Caulkins, Dan P.
 Cecil, James McCosh
 Cecil Dr. Russell L.
 Chadbourne, William M.
 Chait, Rex
 Chalmers, Arthur A.
 Chamberlain, Mrs. Emily Davis
 Chamberlain, James R.
 Chambers, Fred D.
 Chandler, Mrs. Percy M.
 Chanler, William Astor
 Chapman, Dr. T. L.
 Charles, Mrs. M. dePeyster
 Chase, Mrs. G. T.
 Chauncey, A. Wallace
 Chauncey, Miss Emily H.
 Chenery, Mrs. William L.
 Cheney, Mrs. Knight Dexter
 Chenoweth, Bill
 Chiang Yee
 Chidsey, Mrs. Shirley A.
 Child, Miss Ruth Auchincloss
 Childs, Edward C.
 Childs, Eversley
 Chipman, Charles
 Choate, Arthur O.
 Choate, Mrs. Arthur O.
 Choate, Arthur O., Jr.
 Choate, Miss Mabel
 Christopher, Mrs. Donald
 Chubb, Hendon, 2nd
 Church, Austin
 Church, E. J.
 Church, Mrs. Willard
 Cizek, Dr. Louis J.
 Clark, Miss Gladys Voorhees
 Clark, H. Huber
 Clark, Mrs. Harold Benjamin
 Clark, Mrs. John
 Clark, Mrs. LeRoy
 Clark, Mrs. Stephen C.
 Clark, Walter T.
 Clark, Mrs. William Andrews
 Clarke, Dana C.
 Clarke, Thomas Hyde
 Clausen, George U.
 Clayberger, Raymond P.
 Clayburgh, Mme. Alma
 Cleveland, Reginald M.
 Cloete, Stuart
 Clowes, F. J.

Clowes, Frederick V.
 Clyde, William P.
 Coakley, Mrs. Henry B.
 Cobb, Boughton
 Cochu, Ferdinand
 Coffey, Miss Katherine
 Coggeshall, Mrs. Calvert
 Cohen, Edward I.
 Cohn, Lester D.
 Colburn, Albert E.
 Colby, Col. Francis T.
 Cole, Dr. C. Monford
 Cole, Mrs. George W.
 Cole, Mrs. Henry P.
 Cole, Rodney B.
 Cole, Mrs. Rufus
 Cole, William H.
 Coleman, Sydney H.
 Colgate, Henry A.
 Colgate, Mrs. Henry A.
 Colgate, Mrs. John K.
 Colin, Ralph F.
 Collier, Mrs. R. J.
 Collins, Miss Elizabeth E.
 Colt, Harris D.
 Colt, Mrs. Richard C.
 Compton, Richard
 Compton, Mrs. Richard
 Conde, Miss Corrine
 Condit, Miss A. May
 Congdon, G. Maurice
 Conklin, John M.
 Connelly, Albert R.
 Connett, F. S.
 Connick, Arthur E.
 Connolly, M. G.
 Connor, Carleton S.
 Conroy, Mrs. William H.
 Coogan, Mrs. Jay
 Cook, Mrs. Alfred A.
 Coolidge, Henry Parsons
 Coolidge, John T.
 Cooney, Mrs. Edwin W.
 Coonley, Howard
 Cooper, Miss Carolyn Howell
 Cooper, W. J.
 Cooper, W. M.
 Cope, Francis R., Jr.
 Coppell, Miss Mary B.
 Corbin, Mrs. John
 Cormier, Francis
 Corning, Miss Ursula
 Corwin, Saul C.

Cosgrove, Robert E.
 Costigan, Philip J.
 Coudert, Ferdinand W.
 Cowdry, Mrs. William J.
 Cox, Warren E.
 Cragin, Donald Wilson
 Crane, Mrs. W. Murray
 Cranford, Ralph N.
 Crawford, Mrs. Charles A.
 Crawford, Mrs. J. S.
 Cresap, Logan
 Cresson, Mrs. William Penn
 Crimmins, Miss Mary
 Crimmins, Thomas
 Crispell, Reuben B.
 Crocker, George A.
 Crombie, Mrs. Arthur Choate
 Cromwell, Lincoln
 Cronan, Richard J.
 Cross, Mrs. John W.
 Cross, Mrs. Wellington
 Crouch, Philbrick McL.
 Crouse, Master Timothy
 Crowe, Philip K.
 Crowe, Mrs. Philip K.
 Crowley, Arthur W.
 Crownshield, Mrs. Francis B.
 Cruikshank, James A.
 Cruikshank, William
 Crumb, Kittridge B.
 Crystal, Fabian M.
 Cudahy, Mrs. Joseph M.
 Cuddihy, Arthur B.
 Cudlipp, Mrs. Chandler
 Cuff, Frank B.
 Cullman, Howard S.
 Cullman, Mrs. Joseph F., Jr.
 Cumming, Robert C.
 Cummings, G. C.
 Cummins, Mrs. Stephen
 Cunningham, Robert L.
 *Cunningham, W. deLancey
 Currie, John, Jr.
 Currie, Mrs. Laura G.
 Currie, William E.
 Curth, Dr. Helen O.
 *Curtis, Mrs. Allen
 Curtis, Mrs. Edward P.
 Curtiss, Miss Maude H.
 Cuthrell, Miss Ann
 Cutler, John W.
 Cutler, Mrs. John W.
 Cutler, Robert

Cutler, William F.
 Cutting, Mrs. R. Fulton, 2nd
 Cuyler, Lewis B.
 Daché, Mme. Lilly
 Dailey, Mrs. Clarke G.
 Dallett, Mrs. Frederic A.
 Dalley, Edward M.
 Dalley, Mrs. Edward M.
 Dalsgaard, Anker N. D.
 Daly, D. Loughran
 Dammann, Milton
 Damrosch, Mrs. Frank
 Damrosch, Dr. Walter
 Dane, Edward Nathan
 Dane, Miss Eleanor H.
 Dane, Mrs. Ernest B.
 Dane, Ernest B., Jr.
 Dane, Roger
 Danforth, Francis J.
 Daniels, Isidore
 Daniels, Miss Julia
 Darrell, Norris
 Darrow, Whitney
 Davenport, Henry J.
 Davey, Miss Carolyn
 Davey, William N.
 Davidson, Jo
 Davidson, Kenneth S. M.
 Davies, Frederick M.
 Davis, Mrs. Cecil C.
 Davis, Francis B., Jr.
 Davis, J. Lionberger
 Davis, Joseph A., Jr.
 Davis, Morgan
 Davis, Dr. William Edwin
 Davison, Mrs. George W.
 Davison, Mrs. Henry Pomeroy
 Day, Watson Beach
 Dean, Miss Leigh
 Debevoise, Paul
 Debevoise, Thomas M.
 DeCesare, John
 Decker, J. William
 deCoppet, Miss Gertrude
 de Diego, Mrs. Julio
 deForest, Henry L.
 deForest, Mrs. Henry W.
 deForest, Johnston
 Degener, John F., Jr.
 deGersdorff, Mrs. Casper C.
 deKay, Mrs. Sidney
 Delacorte, George T., Jr.
 Delafield, Edward C.

DeLamar, Miss Alice A.
 Delaney, John B.
 Delano, Frederic A.
 Delano, Mrs. Lyman
 del Toro, Miguel Alvarez
 Dembow, George F.
 deMontmorin St. Herem,
 Comtesse
 Demorest, Miss Charlotte K.
 Denby, Edwin H.
 Dennison, Henry S.
 Derby, James Lloyd
 leRham, Mrs. Charles, Jr.
 Desmond, Hon. Thomas C.
 Despard, Clement L.
 Detmer, Julian F.
 Devereux, Alvin
 Devoe, Alan
 Dewing, Arthur S.
 Dexter, George M.
 leZuylen, Baron Egmont
 l'Humy, Miss Adine
 Dick, Adolph M.
 Dickerman, Watson B.
 Dickerson, Mrs. Donald L.
 Dickey, Mrs. Charles D.
 Dickinson, Mrs. John M.
 Didisheim, Henri M.
 Diebold, John T.
 Dillon, C. Douglas
 Disney, Walt
 Dix, Mrs. John Adams
 Doane, Mrs. Benjamin H.
 Dodge, Cleveland E.
 Dodge, Mrs. Cleveland E.
 Dodge, Donald D.
 Doelger, William E. P.
 Dolan, Master James, Jr.
 Dominick, Gayer G.
 Donaldson, J. H.
 Donaldson, Mrs. John W.
 Doolittle, Miss Ethelwyn
 Dorland, Mrs. M. M.
 Dorsay, John
 Doubleday, G. Chester
 Doubleday, James M.
 Dougall, Arthur B.
 Dougherty, J. Hampden
 Dougherty, William A.
 Douglas, Barclay K.
 Douglas, Mrs. Hartford
 Douglas, Mrs. Robert S.
 Deceased
 Downey, John I.
 Draper, Mrs. Charles D.
 Draper, Mrs. Thayer P.
 Dreher, Elmer
 Dresnick, Mrs. Natalie K.
 Drew, Mrs. Charles V.
 Dreyfoos, Alexander W.
 Droutzkoy, Mrs. Maria Theresa
 Drowne, Mrs. H. Russell, Jr.
 Drysdale, George R.
 Duane, Mrs. Carolyn P.
 Du Bois, Floyd R.
 Du Bois, John J.
 Du Bois, Miss Margaret
 Dudley, Ralph
 Duke, Miss Doris
 Dumas, M. G.
 Dumphrey, Robert F.
 Duncan, Fredrick S.
 Duncan, Stuart
 Dunlap, Charles C.
 Dunning, John S.
 duPont, Lamnot
 Durant, Mrs. Donald
 Duryea, Perry B.
 Duryee, Samuel S.
 Dutch, Miss Elizabeth
 * Du Val, Guy
 Dwight, Mrs. Winthrop E.
 Earle, Mrs. Morris
 Eaton, George L.
 Eberstadt, Ferdinand
 Ebner, William F.
 Eckert, H. William
 Eder, Pahnor J.
 Edgar, James A.
 Edgar, Mrs. W. A.
 Edgar, William
 Edmonds, Dean S.
 Edmonds, Mrs. John Worth
 Eggers, Mrs. Carl
 Eichler, August
 Eidlitz, Mrs. Ernest Frederick
 Eifler, Adam J.
 Einhorn, Dr. Max
 Eisenhower, Gen. Dwight D.
 Elder, Robert D.
 Eldridge, William A.
 Elias, Miss Catherine
 Elishewitz, Dr. Harold
 Elkins, Jacob B.
 Elkins, William L.
 Elliott, John
 Ellis, Mrs. Wilbur Dixon
 Ellsworth, Duncan S.
 Ellsworth, John S.
 Elmore, Miss Ada M.
 Emanuel, Victor
 Embury, Aymar, II
 Embury, Mrs. Jane S.
 Emery, Mrs. Brooks
 Emory, Mrs. Martin F.
 Engelhard, Charles
 Engle, George D.
 English, Richard L.
 English, William H., Jr.
 Engstrom, C. William
 Erickson, Mrs. A. W.
 Erlanger, Michael
 Erlanger, Milton S.
 Erwin, Henry P.
 Eskesen, Mrs. T. R.
 Evans, Mrs. B. Mildred
 Evans, Mrs. John C.
 Evans, Mrs. Morgan D., Jr.
 Ewart, Lady Talbot
 Ewing, Bayard
 Ewing, George R. M.
 Ezra, Alfred
 Fagg, Charles C.
 Fairchild, Mrs. B. Tappen
 Falconer, Miss Margaret
 Falk, Myron S., Jr.
 Farber, I. J.
 Farr, H. Bartow
 Farr, John
 Farrell, Laurie H.
 Farrelly, Theodore S.
 Fates, H. L.
 Faust, W. L.
 Fay, Charles J.
 Fay, W. Rodman
 Fearey, Mrs. Morton
 Feinblatt, Mrs. Henry M.
 Feist, Seymour
 Feldman, Paul A.
 Ferber, Dr. Robert
 Ferguson, Mrs. Florence R.
 Ferguson, Dr. Leonard W.
 Ferguson, Milton J.
 Fernandez-Yepes, Francisco J.
 Ferrel, R. W.
 Field, Malcolm G.
 Field, Master Marshall, Jr.

Figowitz, Barney
 Filley, Mrs. Oliver D.
 Fincke, Reginald
 Finneran, Edward T.
 Fisher, Miss Beatrice
 Fisher, Franklin L.
 Fisher, Harry B.
 Fisher, Marion N.
 Fitch, Charles M.
 Fitch, George
 Fitch, Dr. Wilmer Price
 Flagg, Mrs. S. Griswold
 Flagler, Harry Harkness
 Fleischmann, Mrs. Edwin M.
 Fleischmann, Udo M.
 Fleming, Mrs. Matthew C.
 Fletcher, Henry
 Flexner, Master Donald Lee
 Flexner, Miss June Alison
 Flitcroft, Mrs. Barbara
 Flood, C. L.
 Florenco, Louis
 Fluekiger, Miss Dora Whitman
 Fobes, Dr. Joseph H.
 Follett, Master David A.
 Fondiller, Mrs. Richard
 Foote, Sterling De G.
 Forbes, Gordon C., Jr.
 Forbes, John R.
 Ford, Mrs. Howeth T.
 Ford, Sumner
 Forsch, James A.
 Forshay, Edward
 Forster, Herman
 Forsyth, Miss Adele G.
 Fosdick, Mrs. Paulding
 Foster, Dr. Harold A.
 Foulhoux, Mrs. J. Andre
 Fowler, Miss Agnes
 Fox, Mrs. Alice
 Fox, Miss Alice Bleecker
 Fox, Miss Eleanor
 Fox, E. Tunnickliff
 Foy, Mrs. Byron C.
 Francke, Mrs. L. J.
 Frank, Charles
 Frank, Louis
 Franklin, Joseph K.
 Franklin, Robert C.
 Fraser, George C.
 Frederick, Karl T.
 Fredrick, Mrs. Leopold

Freeman, Clayton E.
 Freeman, Miss Gertrude A.
 Freeman, Talbot O.
 Freid, Isadore
 Fremont, Mrs. John C.
 French, Mrs. John
 Freyvogel, C. E. C.
 Fried, Albert
 Fried, Nathan
 Friedman, Michael U.
 Friedman, William
 Frissel, Miss Toni
 Froelich, Sylvan L.
 Frost, Frederick G., Jr.
 Frost, John W.
 Frothingham, William I.
 Fuller, Mrs. Jefferson E.
 Funk, Wilfred
 Funke, Mrs. L.
 Gabriel, Arthur R.
 Gabrielson, Guy George, Jr.
 Gadebusch, Paul H.
 Gaffney, James W.
 Gaillard, William D.
 Gaisman, Henry J.
 Galban, Eugenio
 Gale, C. Herbert
 Gallagher, Mrs. Youell
 Galland, Ned K.
 Gallatin, Mrs. Albert
 Gallatin, Goelet
 Gallowhur, William G.
 Galm, John
 Gamble, Mrs. Sidney
 Gambrill, James H., Jr.
 Gambrill, Richard V. N.
 Gambrill, Mrs. Richard V. N.
 Gans, Mrs. Frederick C.
 Gardiner, Mrs. Philip P.
 Garnjost, Mrs. Frederick W.
 Garvan, Mrs. Francis P.
 Garver, Mrs. Alice P.
 Gates, Mrs. John M.
 Gates, Mrs. Natalie
 Gates, Raymond E., Jr.
 Gause, Edmund C.
 Gaver, Gordon P.
 Gavin, Mrs. Michael
 Gawtry, Lewis
 Gayley, Mrs. H. C.
 Gaylord, Robert M.
 *Geddes, Donald G.

Geer, George Jarvis
 Geer, Mrs. Langdon
 Geis, Mrs. Willis
 Gelb, A.
 Gengler, Mrs. Arthur
 Gerber, Julius
 Gerencser, Vincent F.
 Gerngross, Leo
 Gernsback, Hugo
 Gerry, Mrs. Louis C.
 Gerson, Sidney
 *Gettys, R. E.
 Getz, Herman
 Gibbons, Douglas
 Gibson, Charles DeW.
 Gibson, Mrs. G. S.
 Gibson, Harvey D.
 Gibson, Mrs. Harvey D.
 Gibson, Mrs. William W.
 Giese, George
 Gill, Miss June M.
 Gillmore, Mrs.
 Henry van Kleeck
 Gimbel, Bernard F.
 Gimbel, Mrs. Louis S., Jr.
 Girvan, Mrs. Colin G.
 Githens, W. French
 Githens, Mrs. W. French
 Gittens, Franklin
 Glasel, Miss Marianne
 Glazier, Mrs. Henry S.
 Gleason, James L., Jr.
 Gleaves, Miss Susan Allyn
 Glickenhau, Morris
 Goddard, Arthur E.
 Goddard, Miss Jessamine
 Goddard, Mrs. Morrill
 Godwin, Miss Frances B.
 Godwin, Frederick M.
 Godwin, Mrs. Harold
 Goelet, Mrs. Robert Walton
 Goeller, Dr. Frank Ward
 Goldberg, Gus
 Goldfine, Mrs. Allen L.
 Goldman, Richard S.
 Goldschlager, Sidney
 Goldschmidt, Mrs. Carel
 Goldschmidt, Joel L.
 Goldsmith, Arthur J.
 Goldsmith, Mrs. Milton M.
 Goldsmith, Richard
 Goman, George W.

*Deceased

Goodell, Raymond B.
 Goodhue, Mrs. Charles E.
 Goodkind, Henry M.
 Goodman, Herbert S.
 Goodman, Dr. L. W.
 Goodman, Roland A.
 Goodwillie, Robert H.
 Goodwin, James L.
 Goodyear, Anson Conger
 Gordan, Mrs. John D.
 Gordon, Louis W.
 Gordon, Mrs. William F.
 Gottlieb, Dr. Charles
 Gould, Mrs. Edwin
 Gould, John Davidson
 Gould, Ormond V.
 Goyette, Ivan A.
 Grace, Francis J. S.
 Graeber, Miss Noel
 Graff, Miss Lois Manton
 Graham, Horace R.
 Graham, Dr. John C.
 Graham, Miss Leigh
 Graham, William J.
 Gran, Emanuel
 Grant, Major Chapman
 Grant, Mrs. Wheadon Martin
 Gratz, Mrs. Louis P.
 Graves, Duncan
 Graves, George K., Jr.
 Gray, Henry G.
 Gray, Dr. Julius C.
 Gray, Reginald
 Green, George L.
 Green, Herbert, Jr.
 Green, Sheldon R.
 Green, Mrs. William A.
 Green, Mrs. William G.
 Greenbaum, Miss Alice
 Greenbaum, Dr. Herman
 Greenfield, Frederick William
 Gregg, Albert H.
 Gresham, Henry Lindsay
 Gresser, William
 Griffin, William V.
 Briggs, Miss Mary Livingston
 Grigsby, Miss Susanne S.
 Grinnell, Lawrence I.
 Grinnell, Dr. Robert S.
 Griscom, Mrs. Clement A.
 Griswold, William E. S.
 Groedel, Harry
 Groesbeck, Mrs. Herbert
 Grose, Waldo
 Gross, Max
 Gross, Woolf Paul
 Grosvenor, William
 Grout, Mrs. H. McIntyre, Jr.
 Grover, Master Robinson A.
 Gruner, William C.
 Gruntal, Benedict H.
 Gubar, Albert
 Gudernatsch, Dr. F.
 Gulick, Archibald A.
 Gunnison, Mrs. R. M.
 Gustafson, Robert L.
 Gutmuth, C. R.
 Gutman, DeWitt
 Guy, Miss Emilie J.
 Gwilliam, John
 Gwynne, Mrs. Arthur
 Haas, George C.
 Haas, Gustave
 Haffen, S. Thomas
 Hahn, Fred
 Haight, Mrs. Sherman Post
 Haldt, Harry Peale
 Hall, I. Davis
 Hall, John H., Jr.
 Hall, W. Hunt
 Hallowell, N. Penrose
 Halls, Mrs. William, Jr.
 Hain, Andrew M.
 Hamann, Mrs. William A.
 Hambleton, Miss Jessie
 Hamerslag, Robert J.
 Hamill, Mrs. R. L.
 Hamill, Mrs. Samuel
 Hamilton, Miss Lisa
 Hamlin, Chauncey J.
 Hamlin, S. C.
 Hammer, Miss Bette B.
 Hammett, Dr. John E.
 Hammond, Mrs. John Henry
 Hammond, Miss Natalie Hayes
 Hammond, Paul
 Hand, Charles E. W.
 Hannan, Kenneth H.
 Hard, Mrs. DeCourcy L.
 Hard, Miss Susan
 Hardenbergh, Thomas E.
 Harding, Miss Laura
 Hardy, Charles J.
 Hare, Mrs. Montgomery
 Harkness, Mrs. Grant
 Harlow, Miss Susan Alison
 Harper, John
 Harris, Mrs. Ben Jorg
 Harris, Charles C.
 Harris, Duncan G.
 Harris, John D.
 Harrison, Mrs. Alfred C.
 Harrison, Mrs. George L.
 Harrison, Mrs. W. Henry
 Harrison, Wallace K.
 Hartman, Carl H.
 Hartshorne, Mrs. Harold
 Harvey, Dr. E. Newton
 Harwick, Harry J.
 Haskell, Amory L.
 Hastings, Howard L.
 Hatch, Mrs. Harold A.
 Hatvany, Mrs. Fanny
 Hauser, Donald A.
 Hauswirth, Dr. Louis
 Havemeier, Alfred F. J.
 Havemeyer, Henry O.
 Havemeyer, Mrs. Horace, Jr.
 Havender, Joseph, Jr.
 Hawkins, Dexter C.
 Hawley, James L.
 Hay, Clarence L.
 Hayden, William B.
 Hayes, Mrs. Benjamin
 Haymes, Miss E. Violet
 Haynes, Raymond B.
 Hays, Mrs. Edwin D.
 Hays, Will H.
 Hayward, William F.
 Hazard, Evan B.
 Hazeltine, Dr. Alan
 Head, Henry S. Nugent
 Headrick, Mrs. Harriet King
 Hearst, John Randolph
 Hecker, Miss Frances S.
 Heide, Henry, Jr.
 Heidsieck, Mrs. E. John
 Heimerdinger, Frederick M.
 Hein, Miss Anne Marie
 Heineman, Bernard
 Heinsheimer, Mrs. Norbert
 Heller, Albert E.
 Heller, William G.
 Hellman, Miss Lillian
 Heminway, John H.
 Hendelson, William

Deceased

Henderson, Alexander Iselin
 Henderson, Dr. Edward
 Henneman, John B.
 Hernstadt, William L.
 Herrick, Newbold L.
 Herrmann, Erich S.
 Hess, Mrs. Alfred F.
 Hess, Mortimer H.
 Hess, William
 Hessel, Sidney A.
 Hewins, Miss Elizabeth L.
 Heydt, Charles E.
 Heylman, Mrs. Henry B.
 Heyman, Clarence H.
 Heyman, David M.
 Heymsfeld, Ralph T.
 Hickman, Mrs. Baylor O.
 Hickox, Charles V.
 Higby, Everett
 Hill, E. B.
 Hill, Dr. Howard R.
 Hillas, Robert M.
 Hills, Mrs. James M.
 Hills, Paul W.
 Hinkle, Frederick W.
 Hinnen, Dr. G. A.
 Hinrichs, Hans
 Hirsch, Adolph
 Hirshberg, Eliot P.
 Hirshenhorn, Samuel, Jr.
 Hitchcock, Horace G.
 Hoffman, F. Burrall
 Hoffman, Miss Mary U.
 Hoffman, Mrs. William M. V.
 Hoffman, William W.
 Hoffman, Mrs. William W.
 Hoffmann, Dr. Richard H.
 Hogg, Kenneth S.
 Holden, Milton W.
 Holden, Raymond P.
 Holdsworth, Mrs. Frederick, Jr.
 Hollins, Harry B., Jr.
 Hollister, Mrs. Frederick K.
 Hollstein, Gustavus M.
 Holmes, Duncan A.
 Holmes, Edward J.
 Holton, Charles W.
 Hooker, Mrs. Elon Huntington
 Hope, Mrs. John Gregory
 Hopkins, H. Rogers
 Hoppin, Mrs. Sarah C. W.
 Hopson, Dr. George H.

Horn, Adam J.
 Horn, Frank B.
 Horn, John
 Houston, Miss Jessie F.
 Hoving, Walter
 How, John B.
 Howard, Mrs. Howell H.
 Howard, Miss Lois E.
 Howd, Mrs. Giddings
 Hoyer, F.
 Hoyt, Elton, 2nd
 Hoyt, Mrs. Henry R.
 Hoyt, John Sherman
 Hoyt, Mrs. Lydig
 Hubbard, Miss Deirdre
 Hubbard, Richard L.
 Hubley, Kenneth
 Hudson, Mrs. Lea
 Huffard, Paul P.
 Huffman, Mrs. Moore P.
 Hughes, Charles E., Jr.
 Huguley, Mrs. Arthur W.
 Hull, Mrs. Lytle
 Humphreys, Mrs.
 George H., 2nd
 Hunnewell, Arnold W.
 Hunt, Mrs. Barron
 Hunt, Mrs. James R.
 Hunt, Mrs. Richard C.
 Hunt, Roy A.
 Huntington, Mrs. Archer M.
 Huntington, Miss Catherine C.
 Huntington, E. Irving
 Huppman, Louis R.
 Hurdman, Frederick H.
 Hurley, James S.
 *Hutchins, Augustus S.
 Hutchins, Mrs. Augustus S.
 *Hutchinson, A. A.
 Hutchinson, Mrs. Edna G.
 Hutner, Bernie
 Hutton, John L.
 Hyer, Miss Edna A.
 Hyman, Dr. A.
 Ibbotson, Edward D.
 Ijams, Mrs. J. Horton
 Ingersoll, Mrs. R. V.
 Ireland, Rufus J., Jr.
 Irwin, William Fletcher
 Iselin, Miss Georgine
 Iselin, Mrs. Lewis
 Iselin, Miss Louise M.

Iselin, Mrs. O'Donnell
 Iselin, William O'D.
 Iseman, Harold M.
 Isenberg, A. H.
 Isles, Philip
 Israel, Leon, Jr.
 Isrelli, Jack
 Ittleson, Henry, Jr.
 Ivan, John G.
 Jackson, Mrs. Clifford L.
 Jackson, Frederick W.
 Jackson, John G.
 Jacobi, Lester E.
 Jacobs, Edwin L.
 Jacobus, David D.
 Jaeger, Fred P.
 Jaffin, Dr. Abraham E.
 Jaffray, Mrs. Robert
 James, Mrs. Henry
 Jameson, Edwin C.
 Jaques, Francis L.
 Jarcho, Dr. Julius
 Jeffe, Gen. Ephraim F.
 Jehl, Dr. Joseph R.
 Jenkins, Mrs. Farish A.
 Jenks, Mrs. Robert I.
 Jennings, Miss Gladys F.
 Jennings, Lawrence K.
 Jennings, Percy Hall
 Jessup, Everett C.
 Jezer, Dr. Abraham
 Johnson, Ernest C.
 Johnson, J. Ford
 Johnson, Larry
 Johnson, Murray F.
 Johnson, Mrs. Osa
 Johnson, Mrs. Seymour
 Johnson, Sylvester
 Johnson, T. T.
 Johnston, Scott
 Jonas, John
 Jones, Mrs. Charles
 Jones, Clayton B.
 Jones, Frank N.
 Jones, H. LeRoy
 Jones, Henry Kirkland
 Jones, Marvin Lee
 Jordan, Thomas V.
 Joyce, Adrian D.
 Judson, Clay
 Judson, Miss Helen
 Judson, Wilber

*Deceased

Juta, Jan
 Kagan, Leo B.
 Kahn, Gilbert Sherburne
 *Kahn, Leon S.
 *Kahn, Mrs. Otto H.
 Kahn, Walter N.
 Kahrs, George E.
 Kane, Charles B.
 Kane, Frederick L.
 Kanter, Harry
 Karlesen, Eph A.
 Karelsen, Frank E., Jr.
 Kashins, Herman
 Kaye, Sydney M.
 Kazimiroff, Dr. Theodore
 Kean, Miss Mary Alice
 Kean, Robert Winthrop
 Keena, Mrs. Allis H.
 Keller, Carl Tilden
 Kelley, Nicholas
 Kelley, Mrs. Robert W.
 Kellogg, Chever
 Kellogg, Mrs. Fredric R.
 Kelly, John A.
 Kelly, Thomas Smith
 Kemp, Miss Isabelle
 Kemp, Miss Marion M.
 Kennedy, Miss Rosemary
 Kennedy, Charles
 Kennedy, Dr. Foster
 Kent, Mrs. Richard Peabody
 Kenyon, Frank C.
 Kenyon, Lee J.
 Kenyon, Victor G.
 Kernochan, Mrs. Marshall R.
 Kerrigan, James J.
 Kessler, Dr. Barnett
 Ketcham, E. C.
 Khan, Dr. K. M. Y.
 *Kidder, H. Maynard
 Kienbusch, Carl O.
 King, Miss Charlotte Cornelia
 King, Frederick P.
 King, Mrs. Johnston
 King, Mrs. Paul
 Kingsford, Irving B.
 Kingsley, Darwin P., Jr.
 Kinkead, Miss Jennie H.
 Kinney, Mrs. Warren
 Kirkham, William B.
 Kirkland, Mrs. Wm. Reed, Jr.
 Kirkman, Sidney A.
 Klausmann, Eric K.
 Klein, D. Emil
 Kleinberg, Robert
 Klimerman, Mrs. Sol
 Kline, Miss C. Alma
 Kline, Gardiner
 Klugescheid, R. C.
 Knapp, Dr. Arnold
 Knight, Mrs. Augustus S.
 Knobloch, Henry F. J.
 Knopf, Mrs. S. Adolphus
 Knowlton, Eben B.
 Knowlton, Hugh
 Kobbe, Mrs. George M. W.
 Koch, Edward R.
 Kocher, Walter
 Koehl, Albert
 Kohn, Robert R.
 Koontz, Mrs. Chester B.
 Kopf, Joseph L.
 Korff, Mrs. Serge A.
 Korn, Harold
 Kosby, Miss Ruth
 Kosmak, Dr. George W.
 Kraemer, Alfred Robert
 Kragh, Charles H.
 Kramer, Mrs. Arthur J.
 Kranebell, Ronald W.
 Krech, Mrs. Shepard
 Krezek, K. M.
 Kropp, Robert
 Krueger, Richard G.
 Krugler, Dr. Wallace
 Kuhn, August
 Kunhardt, Henry R., Jr.
 Kunhardt, Mrs. Philip B.
 Kurzman, Charles C.
 Ladd, Miss Deborah A.
 Lamb, Mrs. William F.
 Lambert, Dr. Adrian V. S.
 Lambert, Dr. John P.
 Landeck, Walter V.
 Landegger, Karl F.
 Lane, A. D.
 Lane, Mrs. William H.
 Lane, Wolcott G.
 Langdon, Mrs. Robert M.
 Lange, Alexander
 Langmann, Dr. Alfred G.
 Lanier, Sterling E.
 Lanning, Lester
 Lapham, Raymond W.
 Larkin, Mrs. John A.
 Larsen, Clarence J.
 Larson, Gunnar W.
 La Rue, R. B.
 Lasky, William R.
 Lattin, C. Parker
 Lauder, Edwin G., Jr.
 Laughlin, Mrs. Homer, Jr.
 Laughlin, Thomas I.
 Law, Fredrick G.
 Law, Lewis B.
 Law, Miss Pauline Elizabeth
 Lawless, David F.
 Lawrence, A. Brewster, Jr.
 Lawrence, Mrs. Arthur B.
 Lawrence, Carteret
 Lawrence, Charles C.
 Lawrence, Mrs. James F.
 Lawson, Miss Jean
 Lea, Miss Fanny Heaslip
 Leach, Master Alfred A., Jr.
 Learned, Mrs. Walter
 Ledyard, Mrs. Isabel
 Lee, Frederick B.
 Lee, Horace N.
 Lee, James T.
 Lefferts, Mrs. Barent
 Lefferts, Mrs. Gillet
 Leffingwell, Russell C.
 Lehman, Mrs. Herbert H.
 Lehman, Mrs. Robert
 Lehrer, Miss Elizabeth Ann
 Leidesdorf, S. D.
 Leifer, Dr. Eugene
 Leigh, W. R.
 Lennon, Walter J.
 Leo, Jack G.
 Lerner, William E.
 LeRoy, Edward A., Jr.
 Lester, Henry M.
 Lester, Henry M.
 Leu, Louis
 Levenson, Robert
 Levey, Charles Bispham
 Levey, Miss Margaret Bispham
 Levin, Marvin R.
 Levitt, Dr. Alexander
 Levy, Abraham D.
 Levy, Mrs. B. J.
 Levy, Bernard
 Levy, Dr. David M.
 Lewine, Jerome

*Deceased

Lewis, George A.
 Lewis, J. Spedan
 Lewis, Madison H.
 Lewisohn, Samuel A.
 Leyendecker, Richard A.
 Lieb, Dr. Charles C.
 Liebman, Louis
 Liebowitz, Benjamin
 Liedl, Charles
 Lilienthal, Howard L.
 Lilienthal, Mrs. Joseph L.
 Lincoln, Mrs. Frederic W.
 Lindeberg, H. T.
 Lindemann, Roland
 Linder, Harold F.
 Lindey, Alexander
 Lipman, Samuel
 Lipman, Walter L.
 Lipsett, Charles H.
 Lissberger, Edmund
 Litchfield, Lawrence, II
 Litt, Bertram
 Littlejohn, Mrs. Hugh
 Littwitz, Alvin W.
 Livingston, Miss Angelica
 Livingston, Miss Anna P.
 Livingston, Goodhue
 Livingston, John H.
 Livingston, Mrs. Robert C.
 Locke, Otto Martin
 Lockett, Arthur H.
 Lockwood, Dr. Richard A.
 Lockwood, William A.
 Loeb, Gerald M.
 Loeb, Henry A.
 Loeb, Howard A.
 Loeb, John L.
 Loeb, Oscar
 Loening, Mrs. Albert P.
 Long, Richard H.
 Loomis, Mrs. Alfred L., Jr.
 Lopez, J. E.
 Lord, Mrs. Frederic W.
 Lord, Walter
 Lovett, Mrs. Robert A.
 Low, Miss Harriette
 Low, Mrs. Madeleine M.
 Lowell, Mrs. Frederick E.
 Lowenstein, Leo
 Lowman, Lawrence W.
 Lowther, Mrs. Florence de L.
 Lubber, Harry I.

Ludwig, Jesse J.
 Luebberrmann, Col. Henri A.
 Lueder, C. G.
 Luke, Adam K.
 Lunt, Storer
 Lusk, Mrs. William B., Jr.
 Lynch, William
 Lyon, Alfred E.
 Lyon, Miss Claudia
 Lyon, Miss Ruth
 Maas, Mrs. Milton A.
 Maass, Mrs. Richard
 MacDonald, Henry
 Machado, Jose A., Jr.
 MacKay, John F.
 MacKay, Mrs. Malcolm S.
 Maclaren, Mrs. Colin S.
 Macquillen, Miss Anne H.
 MacRae, Elliott B.
 Maeder, Mrs. John S.
 Mager, F. Robert
 Magid, Leon
 Magie, James McCosh
 Mali, Mrs. Henry J.
 Malin, Mrs. Henry
 Mallinson, H. R.
 Malone, Miss Dorothy
 Mancke, Mrs. Henry
 Mandel, Max
 Maneely, Edward F.
 Manice, Mrs. William DeF.
 Mann, Alan N.
 Manning, James H.
 Manship, Paul
 Marckwald, Albert H.
 Marino, Charles C.
 Markell, Lester
 Marks, Arthur W.
 Marks, Miss Barbara Edna
 Marr, Miss Patricia
 Marsh, Alonzo Kimball
 Marsh, Harry W.
 Marsh, Norman J.
 Marshall, Charles C.
 Marshall, Miss Edith G.
 Marshall, Mrs. George
 Marsters, Mrs. Arthur Allen
 Marsters, Miss Pamela S.
 Marston, Edgar J.
 Marston, Hunter S.
 Martenet, Mrs. May Davis
 Martin, Bernard J.

Martin, Bradley
 Martin, Miss Elizabeth P.
 Martin, Mrs. Grinnell
 Martin, Mrs. Harry P.
 Martin, Shelton E.
 Martin, Mrs. Shelton E.
 Martin, William F.
 Martin, William R. H.
 Martini, Mrs. Fred
 Marvin, Langdon P.
 Marvin, Mrs. Langdon P.
 Mason, Charles N.
 Mason, L. Randolph
 Masters, Mrs. Francis R.
 Masters, John
 Matthews, T. S.
 Matthiessen, Erard A.
 Maude, Mrs. E. F.
 Maxwell, Dr. James D.
 May, Mrs. Charles H.
 Maybarduk, Leon A.
 Mayer, John
 Mayer, Mrs. John A.
 Maynard, Richard S.
 Maynard, Mrs. Walter
 McAlpin, Mrs. Allan H., Jr.
 McAlpin, David H., Jr.
 McAneny, Mrs. George
 McBaine, John Neylan
 McCance, Mrs. Thomas
 McCanliss, Lee
 McCann, Frasier W.
 McCann, Mrs. Lawrence G.
 McCann, R. H.
 McCarter, G. W. C.
 McCarthy, Cal J.
 McClintock, Gilbert S.
 McClure, H. Elliott
 McCombs, Dr. A. P.
 McCormack, Mrs. Alfred
 McCormack, E. F.
 McCormick, Miss Mildred
 McCrea, Mrs. James A.
 McCulloh, J. S.
 *McDermott, John P.
 McDonnell, Hubert
 McDuffie, Duncan
 McElroy, Mrs. Thora Rona
 McFadden, Louis E.
 McGinley, Mrs. John R., 2
 McGrath, F. Sims
 McGuckin, B. F.

*Deceased

McIlhenny, Edward A.
 McIntosh, Allan J.
 McKenzie, Mrs. W. M.
 McKittrick, Thomas H.
 McLane, Mrs. Thomas S.
 McLaughlin, John P.
 McLean, Marshall
 McTarnahan, William C.
 McVeigh, Charles S.
 McVeigh, Mrs. Charles S.
 Medina, Harold R.
 Megear, Mrs. Thomas J.
 Mellon, Charles Henry
 Meloni, Aldous
 Menary, Robert V.
 Mendelsohn, Walter
 Mendelson, Alan N.
 Mendelson, Herbert
 Merrill, Edwin G.
 Merrill, F. Hamilton, Jr.
 Merrill, Oliver B., Jr.
 Merrill, Mrs. Pauline G. W
 Merritt, Mrs. Walter Gordon
 Metcalf, Manton B., Jr.
 Metcalf, Prof. Z. P.
 Metivier, George
 Mey, John H.
 Meyer, Arthur S.
 Meyer, Eugene
 Meyer, Henry von L.
 Meyer, Herbert
 Meyer, J. Edward
 Meyer, Maurice, Jr.
 Michalis, Clarence G.
 Midinian, Mrs. Souren H.
 Migel, Richard H.
 Milbank, Robert W., Jr.
 Milburn, Mrs. Devereux
 Miles, Richard Wakefield
 Miles, Sanford
 Millar, Mrs. David, Jr.
 Miller, C. Blackburn
 Miller, Mrs. G. Macculloch
 Miller, George C.
 Miller, Dr. Kate Freeman
 Miller, Mrs. Kenneth C.
 Miller, Lawrence McK.
 Miller, Mrs. Martha H.
 Miller, Roswell
 Miller, Mrs. Roswell
 Miller, Master Warren Bailey
 Miller, Mrs. William Davis

Deceased

Millhiser, Mrs. Regina V. G.
 Mills, R. C.
 Milmine, Mrs. Charles E.
 Milmine, Mrs. George P.
 Milton, David M.
 Minor, Mrs. Clark H.
 Minster, Walling
 Misch, Robert J.
 Mitchell, Cornelius
 Mitchell, J. Murray
 Mitchell, Sidney A.
 Mitchell, Mrs. S. Roger
 Model, Mrs. Jean
 Moderov, A.
 Moffat, Donald
 *Mogi, Mrs. Y.
 Mohr, Morris
 Mohun, C. Peabody
 Mol, A. A.
 Moller, Miss Jane
 Molnar, Nicholas M.
 Montgomery, Master Peter
 Moore, Mrs. Benjamin
 Moore, Mrs. Casimir de R.
 Moore, Mrs. Edward S., Jr.
 Moore, Mrs. Frederick L.
 Moore, Mrs. Louis deBebian
 Moorehead, Ludwig K.
 Moose, Edward
 Moran, Daniel E.
 Moran, Eugene F.
 Moran, Eugene F., Jr.
 Morawetz, Mrs. Victor
 Morehead, John M.
 Morgan, Alexander P.
 Morgan, Miss Anne
 Morgan, Junius S.
 Morgan, P. Angus
 Morgan, Robert W.
 Morgan, William Fellowes, Jr.
 Morley, Mrs. Frederick H.
 Morresy, Mrs. John
 Morris, Allen Law, Jr.
 Morris, Mrs. Dave H.
 Morris, Rev. Dr. DuBois S.
 Morris, Mrs. Robert H.
 Morrison, Mrs. Charles King
 Morrone, Michael Francis
 Morton, Seth W.
 Moses, L. Gustam
 Moskovics, Mrs. F. E.
 Mosle, Mrs. A. Henry

Mosman, Philip A.
 Moulton, Francis S.
 Moyer, Miss Eleanor E.
 Mudge, Mrs. Alfred E.
 Muehlstein, Julius
 Muggenthaler, Mrs. Bertina
 Muhlethaler, Dr. Paul
 Muhlfield, Frank J.
 Mullaney, Eugene L.
 Muller, Miss Elizabeth
 Muma, John R.
 Mumford, George S., Jr.
 Munger, Edward A.
 Munroe, Miss Cynthia L.
 Munroe, Sydney P.
 Murin, Theodore
 Murphy, Adrian
 Murphy, Mrs. John E. B.
 Murray, Mrs. Edward E.
 Murray, Miss Jeannine
 Murray, W. J., Jr.
 Muzelak, Peter
 Myers, Mrs. Cornell
 Myerson, Joseph G.
 Mygatt, Master Joseph R.
 Nadig, Alfred
 Naef, Dr. Paul A.
 Namm, Miss Peggotty Hanks
 Naumburg, C. Frank
 Naugle, John Jay
 Navin, Mrs. Nona
 Nayfack, Bertram S.
 Nebolsine, Miss Irina
 Neeser, Miss Elvine L.
 Nelson, W. D.
 Nesmith, Col. James, 2nd
 Nestel, Walter
 Neuberger, Roy R.
 Neumann, Miss Rosalie B. G.
 Neuss, Miss Dorothy
 Neustadt, Mrs. S.
 Newburger, Alfred H.
 Newburger, Comm. Morton J.
 Newman, Carl E.
 Newman, Ernest
 Newton, Howard M.
 Newton, Mrs. R. C.
 Newton, William L., Jr.
 Nichols, Charles W., Jr.
 *Nichols, Clarence H.
 Nichols, Mrs. Francis T.

Nichols, Mrs. George
 Nicholson, Mrs. G. J. Guthrie
 Nickerson, Major Hoffman
 Niles, Miss Charlotte
 Nitardy, F. W.
 Noble, Mrs. Carl S.
 Noble, Mrs. Lawrence
 Nodelman, Master Jared
 Norman, Bradford, Jr.
 Norton, Dr. William S.
 Noyes, Thomas E.
 Nyden, Ernest E.
 Nyden, Gustaf A.
 Oak, Miss Dorothy
 Oakes, Mrs. Malcolm
 Oakley, Mrs. R. Lawrence
 Oastler, Mrs. Frank R.
 Oberfelder, Walter S.
 O'Brien, Kenneth
 O'Brien, Morgan J., Jr.
 Ochis, Michael
 Oenslager, Donald M.
 Oeste, Miss Marion
 Oestreicher, Sylvan
 Offerman, John
 Ogden, Charles W.
 Ogden, Mrs. John Wilson
 Ogden, Miss Mary F.
 Ogilvie, Walter E.
 Oglebay, Miss Kate
 Ohlandt, B. C.
 Ohmeis, John
 Olcott, Mrs. Charles A.
 Olcott, Mrs. Evelyn Fogg
 Old, Prof. Marcus C.
 Old, William Erwood, Jr.
 Oldfield, William H.
 Olds, Mrs. Robert E.
 Oliver, Miss Louise Lee
 Olmsted, Mrs. Clarence E.
 Olmsted, Mrs. Henry C.
 Olmsted, Robert G.
 Opdyke, Pieter J.
 Orbison, Douglas C.
 Oresman, A. Louis
 Orth, Charles D.
 Ortner, Louis M.
 Orvis, Mrs. Hardin
 Osborn, A. Perry
 Osborn, Earl D.
 Osborn, Mrs. John J.
 Osborne, Carl N.

Osborne, Mrs. Dean C.
 Osborne, Mrs. Harold S.
 Osborne, John A.
 Oser, Felix
 Ostertag, Mrs. Edna M.
 Ostroga, Seymour
 Otheman, Roswell C.
 Otis, Mrs. Harold
 Ottenberg, James S.
 Otter, Miss Mary
 Ottinger, Lawrence
 Outerbridge, Frank R.
 Outwater, John O.
 Owens, Michael
 Pack, Miss Polly Wells
 Page, Miss Ione
 Page, Nelson L.
 Page, Robert G.
 Page, Mrs. Samuel M.
 Pagenstecher, Miss Bertha
 Paine, Hugh E.
 Paine, Richard C.
 Palmer, Leslie E.
 Palmer, Miss Maud E.
 *Pardee, Dr. Irving H.
 Park, Mrs. H. Halsted
 Park, Harold Halsted, Jr.
 Parker, Miss Caroline M.
 Parker, Daniel Neely
 Parker, Mrs. Kenneth
 Parkinson, Mrs. John, Jr.
 Parmelee, Miss Elizabeth
 Parr, F. Van S., Jr.
 Parrott, Master Thomas S.
 Parsonnet, Dr. A. E.
 Parsons, Mrs. Edgerton
 Parsons, Dr. Herbert
 Parsons, Mrs. J. Graham
 Parsons, Mrs. J. Lester, Jr.
 Parsons, Mrs. Joseph
 Parsons, Miss Kathrine De B.
 Parsons, Dr. William Barclay
 Paton, Dr. R. Townley
 Patterson, Mrs. Moorehead
 Patterson, Dr. Russel H.
 Pattison, Mrs. Ethel Ely
 Paul-Wilcox, Miss Iris J.
 Payne, Dr. Mary Ann
 Paxton, Miss Sara S.
 Payson, Mrs. Charles Shipman
 Pearce, Mrs. Arthur W.
 Peck, Arthur J.

Pell, Stephen H. P.
 *Pell, Williamson
 Pell, Mrs. Williamson, Jr.
 Pennoyer, Miss Jessie M.
 Pennoyer, Mrs. Paul G.
 Perkel, Dr. Louis L.
 Perkins, George W.
 Peters, Mrs. W. Y.
 Pfeiffer, Timothy N.
 Pfeiffer, Mrs. Timothy N.
 Pflieger, Robert P.
 Pforzheimer, Carl H.
 Pforzheimer, Walter
 Phelps, Dr. Gouverneur Morris
 Phelps, Mrs. Sheffield
 Philipbar, Charles W.
 Philipp, Col. Leopold
 Phillips, Dr. Walter
 Pickard, Mrs. Marion O.
 Pickman, Dudley L., Jr.
 Piel, William F. J.
 Pierce, Miss Joan D.
 Pierrepont, John
 Pierrepont, R. Stuyvesant
 Pierrepont, Mrs. R. Stuyvesant
 Pillot, Miss Mathilda Louisa
 Pinckney, Dr. Frank H.
 Pinkerton, Robert A.
 Pioselli, Mrs. Alice B.
 Piper, Lester
 Pitman, Mrs. L. F.
 Pitman, Theodore B.
 Place, Mrs. Hermann G.
 Platt, Mrs. Frank H.
 Platt, Frederick Putnam
 Platt, Livingston
 Plohn, Charles
 Plummer, John F.
 Polkinghorn, Mrs. Frank A.
 Polozie, Michael E.
 Pomeroy, Daniel E.
 Pomeroy, Robert, III
 Pons, Miss Lily
 Ponsonby, Miss Carolyn
 Pool, Dr. Eugene H.
 Poole, Mrs. Dorothy W.
 Pope, Miss Hilda L.
 Porter, Mrs. Cole
 Porter, Mrs. N. V.
 Porter, Mrs. William E.
 Posey, Mrs. S. Felton
 Potter, Henry C.

*Deceased

Potter, L. DeGrove
 Pottier, Auguste R.
 Potts, William R.
 Pough, Richard H.
 Powell, Miss Rachel Hopper
 Powers, Mrs. Helen L.
 Powers, Joshua B.
 Prasad, Prof. Kali
 Pratt, Auguste G.
 Pratt, Mrs. Frederick R.
 Pratt, Mrs. Harold I.
 Pratt, Mrs. John T.
 Pratt, John T., Jr.
 Pratt, Richardson
 Pratt, Mrs. Richardson
 Pratt, Sherman
 Prentis, Edmund A.
 Prentiss, Marshall
 Press, Dr. Jean M.
 Price, Frank J.
 Price, Fredric N.
 Price, Miss Mary Lyle
 Price, Mrs. Nancy G.
 Price, Samuel
 Pride, Frederick W. R.
 Prince, J. Duffield
 Prince, Theodore
 Prioleau, Horry F.
 Proctor, Martin
 Proewig, Dr. F. W.
 Prout, Timothy
 Pruyn, Mrs. Edward L.
 Pruyn, Dr. F. Morgan
 Pruyn, Francis L.
 Pryor, Mrs. Morris McKim
 Putallaz, Frank J.
 Pyne, Miss Alison
 Quaile, Mrs. Emerson B.
 Quaranta, John V.
 Quinn, Mrs. Evan V.
 Rabenau, Herman
 Rae, Giles M.
 Rahr, Guido R.
 Rainbeau, Arthur
 Raines, Mrs. Grace S.
 Rainey, Mrs. Roy A.
 Raisler, Robert K.
 Ramsey, Lloyd
 Randall, Jesse W.
 Ranger, Stanley
 Raphael, Arthur
 Rasmus, Albert A.

Deceased

Rasmus, William T.
 Ratcliffe, George L.
 Rauch, Henry E.
 Ray, John H.
 Raymon, Jack B.
 Read, Bayard W.
 Read, Duncan H.
 Read, Miss Nancy
 Reboul, Mrs. J. B.
 Redmond, Mrs. Henry S.
 Redmond, Roland L.
 Reed, Carl S.
 Reed, Mrs. Chester T.
 Reed, Miss Jean
 Reiher, James D.
 Reilly, John A.
 Reimers, Carl
 Reiner, Ignatz
 Reisinger, Curt H.
 Remington, Mrs. Francis Kirk
 Remmers, Walter E.
 Rentschler, Mrs. Gordon S.
 Resor, Stanley
 Revitz, Samuel
 Reydel, William
 Rhinelander, Philip, 2nd
 Rhoads, Dr. Cornelius P.
 Ribblesdale, Lady
 Rice, Grantland
 Richard, L. A.
 Richards, Archibald M.
 Richards, Mrs. Junius A.
 Richards, Miss Ruth
 Richardson, David L.
 Rick, Miss Karen
 Rickard, Edgar
 Riehle, Mrs. Theodore M.
 Ries, Mrs. Donald
 Righter, Miss Harriet T.
 Riley, Dr. Henry Alsop
 Riley, Mrs. James W.
 Rimmeler, Philipp
 Rindlaub, Mrs. Willard W.
 Ripley, James H.
 Ripley, Julien A.
 Ripley, Paul M.
 *Ripley, Robert L.
 Rives, F. Bayard
 Robb, Alexander F.
 Roberts, Fred E.
 Roberts, George
 Roberts, Owen Freeman

Robertson, Miss Gail
 Robertson, Norman F.
 Robinson, Beverley R.
 *Robinson, Mrs. Carrie Martin
 Robinson, Charles Larned
 Robinson, J. L.
 Robison, Ellis H.
 Rochow, Donald S.
 Rockefeller, Miss Ann C.
 Rockefeller, Miss Sandra
 Rodd, Thomas, III
 Rodgers, William S. S.
 Roehl, Mrs. Winslow J.
 Roger, John
 Rogers, Mrs. Benjamin
 Rogers, Mrs. Francis
 Rogers, Herman L.
 Rogers, Hubert E.
 Rogers, Mrs. John, Jr.
 Rogosh, Rev. Andrew
 Rolland, Charles L., Jr.
 Roosevelt, George E.
 Roosevelt, Mrs. George Emlen
 Ropes, Chapman
 Rose, Alfred L.
 Rose, Miss Mary
 Rose, Mrs. Milton C.
 Rosen, Felix T.
 Rosenbaum, Master Stephen
 Rosenberg, Charles
 Rosenberg, Edwin A.
 Rosenberg, Mrs. Edwin
 Rosenberry, Mrs. Samuel L.
 Rosenfeld, Saul M.
 *Rosenstein, Henry
 Rosenthal, Miss Elizabeth
 Rosenthal, Morris S.
 Rosenthal, Paul
 Rosenthal, William
 Ross, Frank H.
 Ross, Hollis T.
 Ross, Philip L.
 Ross, Dr. Sherman
 Rossbach, Max J. H.
 Rossiter, Alfred
 Roth, Mrs. Andrew Winton
 Roth, Jerome
 Roth, Philip
 Roth, William
 Rothschild, Mrs. Walter N.
 Rounsevel, Mrs. Ashton
 Rouse, Harold A.

Rowell, Mrs. Frank B.
 Rowland, Benjamin, Jr.
 Rowland, Mrs. John C.
 Royster, Mrs. Thomas S., Jr.
 Rubin, Dr. Isidore C.
 Ruedin, Pierre
 Ruhe, Louis
 Ruhm, Mrs. Herman D., Jr.
 Rumsey, Charles C.
 Rumsey, Mrs. David
 Rusecki, Lawrence
 *Russell, Mrs. Charles Howland
 Russell, Frank F.
 Russell, J. Townsend
 Ryder, John H.
 Saar, Mrs. Emma M.
 Sachs, Israel
 Sachs, Teviah
 Sage, Miss Elise E.
 Sahle, Harry F.
 St. John, Dr. B. E.
 St. John, Mrs. Orson L.
 St. John, T. Raymond
 Salisbury, Mason D.
 Salmon, Mrs. Walter J.
 Salz, Irwin F.
 Sammis, Donald Stuart
 Samuel, Ralph E.
 San Antonio Zoological Society
 Sand, Henry A. L.
 Sandalgi, Rev. Paul J.
 Sanderson, Ivan T.
 Sanderson, John
 Sandor, Paul
 Sanford, Dr. L. C.
 Sanford, Warren B.
 *Sanford, Mrs. Warren B.
 Sanger, Mrs. Elliott M.
 Sapiha, Master Nicholas
 Sargent, Porter
 Sartorius, Herman
 Satterlee, Hugh
 Sauerbrey, William A.
 Saul, Richard
 Saunders, Bertram H.
 Sauter, Fred
 Savage, Mrs. Theodore F.
 Sayles, Mrs. Robert W.
 Scaife, Alan M.
 Scales, Victor H.
 Scarborough, Henry B.
 Schaefer, Henry B.

Schaefer, Rudolph Jay
 Schenck, Charles L.
 Scherrer, Miss Clara A.
 Schetty, Frank R.
 Scheuermann, Henry
 Schieffelin, Mrs. Cooper
 Schiemann, Herbert F.
 Schiff, Mrs. Gustave Henry
 *Schiff, Jacob R.
 Schildwachter, Albert G.
 *Schlageter, Mrs. George
 Schlegel, George, 3rd
 Schlesinger, Ferdinand G.
 Schlesinger, Robert
 Schley, Mrs. Kenneth B.
 Schlicht, William
 Schmeidler, Robert
 Schmidhauser, Harold B.
 Schneider, Franz
 Schneider, Walter G.
 Schneierson, Samuel D. S.
 Schoenheimer, Pierre L.
 Scholle, Hardinge
 Scholle, William D.
 Scholz, John Bigelow
 Schonbrunn, S. A.
 Schrader, George L.
 Schramm, Miss Ebben
 Schreiman, Miss Evelyn S.
 Schubert, Mrs. Quentin Melling
 Schulte, Mrs. David A.
 Schultes, Miss Genevieve
 Schultz, Harry O.
 Schulz, William M.
 Schur, Ira A.
 Schutzendorf, Mrs. Sally
 Schwab, E. M.
 Schwarz, Miss Emily E.
 Schwarz, Frederick A. O.
 Scofield, Robert R.
 Scott, Frederic R.
 Scott, Henry C.
 Scott, Mrs. Stuart
 *Scribner, Mrs. Arthur H.
 Seagle, Mrs. N. A.
 Sears, Mason
 Sears, Mrs. Philip S.
 Sedgwick, Francis M.
 Seeman, J. Stanley
 Selby, John C.
 Selig, Samson
 Seligman, Walter

Sergievsky, Mrs. Boris
 Serventi, Charles
 Sexton, Mrs. R. W.
 *Seymour, Edmund
 Shaffer, Mrs. Florence C.
 Shailer, Frank A.
 Shain, Sam
 Shanley, Bernard, 3rd
 Shannon, George C.
 Shapiro, Master Peter
 Sharp, Dale E.
 Sharp, Mrs. L. I.
 Shattuck, Mrs. Edwin P.
 Shaw, Earle T., Jr.
 Shea, James P.
 Shearer, Mrs. George L.
 Sheffield, Mrs. James R.
 Sheffield, William H., 3rd
 Sheilds, James E.
 Sheldon, James
 Sheldon, Mrs. Magda M.
 Shelley, Miss Mona
 Shepard, Miss Dorothy
 Sherer, Dunham B.
 Sherman, Edwin F.
 Sherman, Mrs. Louise
 Shiffman, Dr. Harry
 Shilling, Howard W.
 Shippee, Lester E.
 Shrewsbury, Miss Ethel M.
 Sickels, W. E.
 Siebem, Henry W.
 Siedenbure, Mrs. Reinhard
 Siemel, Sasha
 Sierman, Miss Marion G.
 Silleck, Henry G., Jr.
 Simmon, Rudolph
 Simmons, Charles Herbert, I.
 Simon, Dr. John L.
 Simon, Mrs. Robert E.
 Simpson, Miss Sallie
 Sinclair, Mrs. Jennie H.
 Singer, Herbert M.
 Singer, Morris
 Sinks, Alfred H.
 Sinnigen, Mrs. Walter C.
 Sipp, Mrs. John Herbert
 Skeel, Mrs. Roswell, Jr.
 Slade, Mrs. C. F. Roe
 Slaughter, Mrs. Charles B.
 Sleeper, William A.
 Sleik, Henry

*Deceased

Sloan, Mrs. Samuel
 Sloat, Howard
 Slotter, Mrs. Charles F.
 Smadbeck, Warren
 Smith, Blanchard
 Smith, Francis M.
 Smith, Miss Gertrude
 Robinson
 Smith, Mrs. H. Ben
 Smith, Mrs. Harold DeWitt
 Smith, Harry Dwight
 Smith, Henry Atterbury
 Smith, Howard Caswell
 Smith, J. Hopkins, Jr.
 Smith, J. Spencer
 Smith, Lee Thompson
 Smith, Maxim
 Smith, Mrs. Ruth Ferris
 Smith, Sherwin Douglas
 Smith, Thomas L.
 Smith, Warren S.
 Smithe, Frank B.
 Smithers, C. Francis
 Smyth, David W.
 Smyth, Herbert C., Jr.
 Smyth, Mrs. Nathan A.
 Snider, Miss Nancy Constance
 Snowden, Miss Sandra
 Snyder, Robert H., Jr.
 Solomons, Mortimer J.
 Somerville, S. C.
 Sonneborn, Dr. Ferdinand
 Sonneborn, Rudolf G.
 Sonnenfeld, Joseph
 Soria, Mrs. Dario
 Spalding, Albert
 Speiden, Mrs. Hammond
 Spencer, Duncan M.
 Speyers, Julian R.
 Spichler, Leo
 Spofford, Charles M.
 Spurr, Joseph James, 2nd
 Stacey, Samuel
 Stagg, Frederick L.
 Stainton, Mrs. Estelle
 Stanley, Alfred T.
 Stanley, Harold
 Stanley, Robert C.
 Stanley-Brown, Dr. Margaret
 Stannard, E. T.
 Stanton, Master Peter West
 Stanwick, Charles A.

Deceased

Staples, Alfred T.
 Starret, Mrs. Elizabeth R.
 Starring, David Swing, Jr.
 Stebbins, Theodore E.
 Steever, Edgar Z., IV
 Stefansson, Vilhjalmur
 Steffanson, Mrs. H. B.
 Stehlin, Charles F.
 Stein, Dr. Kenneth E.
 Stein, M.
 Steinbeck, John
 Steinberg, Max
 Steiner, E. W.
 Steinhardt, Frederick J.
 Steinhardt, Samuel C.
 Steinway, Theodore D.
 Steinway, Mrs. Theodore E.
 Stephens, Francis X., Jr.
 Sterling, Mrs. Robert D.
 Stern, Edgar B.
 Stern, Edward N.
 Stern, Emil
 Stern, J. David
 Stern, Michael P.
 Stern, Rupert S.
 Sternberg, Samuel L.
 Stetson, Mrs. Basil W.
 Stetson, Franklin D.
 Stetson, J. P.
 Stetten, Dr. De Witt
 Stevens, Mrs. Basil M.
 Stevens, Evarts C.
 Stevens, Harry R.
 Stevens, Mrs. Mary
 Stevenson, Mrs. Robert A., Jr.
 Stewart, Alexander M.
 Stewart, Miss G. Marieta
 Stewart, Percy M.
 Stewart, William A. W.
 Stieglitz, Marcel H.
 Stiger, Miss Frances A.
 Stillman, C. D.
 Stillman, Miss Charlotte R.
 Stillman, Mrs. Ernest G.
 Stimson, A. C.
 Stokes, J. G. Phelps
 Stokes, Mrs. J. G. Phelps
 Stoll, Charles H.
 Stolpe, David E.
 Stolper, Joel
 Stone, Mrs. F. Courtney
 Stone, Maurice L.

Stotz, Norman I.
 Stout, Andrew V.
 Stoutenburgh, John L., Jr.
 Stowe, Mrs. Lyman Beecher
 Straka, Jerome A.
 Straub, Anthony F.
 Straub, Paul A.
 Straus, Mrs. Nathan
 Strebeigh, Waring C.
 Streck, Dr. Charles B.
 Streckert, Henry B., Jr.
 Stringfellow, Miss Ethel Grey
 Stritter, Miss E. Eleanor
 Strobel, Walter E.
 Strong, Mrs. Charles H.
 Strumpen-Darrie, J.
 Strubing, Mrs. William
 Stuart, Mrs. David
 Stuart, Lyall L.
 Stuart, William F.
 Stumpp, Mrs. Edwin A.
 Stupp, Mrs. C. G.
 Sturges, Mrs. Walter Knight, Jr.
 Sudman, Victor J.
 Sullivan, Thomas
 Sully, Wilberforce, Jr.
 Sulzberger, Arthur Hays
 Sulzberger, Mrs. Arthur Hays
 Sulzberger, Dr. Carl Fulton
 Summers, George W.
 Sumner, Miss Estelle
 Sunderland, Edwin S. S.
 Sutphen, Mrs. Dunbar D.
 Sutton, David V.
 *Sverdlik, Simon
 Swan, Joseph R.
 Swan, Mrs. Thomas W.
 Swanson, Dr. Fritz J.
 Swayne, Miss Eleanor
 Sweeney, Hon. Vincent J.
 Sweetser, Norman
 Swenson, S. R.
 Swenson, Mrs. Thusnelda
 Swift, Harold H.
 Swope, Hon. Gerard
 Swope, John
 Sydney, Manuel G.
 Sydor, William
 Symington, Charles J.
 Szechenyi, Miss Sylvia
 Taber, Mrs. John S.
 Taddiken, Mrs. Bertha A.

Taddiken, Miss Melita
 Taggart, Mrs. Rush
 Talbott, H. E.
 Talmage, John D.
 Tanenbaum, Samuel A.
 Tarr, Edward
 Tarrent, John E.
 Tassel, Mrs. Georges M.
 Tate, Mrs. H. Clinch
 Taub, Allan
 Taves, Dr. Ernest H.
 Taylor, Mrs. Henry C.
 Taylor, James B.
 Taylor, John W.
 Taylor, Dr. Kenneth
 Taylor, Mrs. Read
 Taylor, Willis H., Jr.
 Teagle, Walter C., Jr.
 Ten Eick, William A.
 Terry, John T.
 Terry, Roderick, Jr.
 Terry, Mrs. William C.
 Tew, Frank G.
 Tew, James Dinsmore, II
 Tew, Mrs. James Dinsmore, II
 Thacher, Mrs. John S.
 Thacher, Thomas
 Thacher, Hon. Thomas D.
 Thacher, Mrs. Thomas D.
 *Thees, John D.
 Thees, John D.
 Tholand, N. K. G.
 Thomas, H. Gregory
 Thomas, Harvey M.
 Thomas, Mrs. Howard L.
 Thomas, Mrs. Joseph B.
 Thomas, Mrs. Landon
 Thomas, Marshall M.
 Thompson, D. G. Brinton
 Thompson, Miss Dorothy
 Madison
 Thompson, Earle S.
 Thompson, Mrs. Holland
 Thompson, Mrs. Lewis S.
 Thompson, Mrs. Margaret E.
 Thompson, Mrs. Milton
 Thompson, Miss Ruth
 Thompson, Samuel A.
 Thompson, Walter Gordon
 Thorne, Mrs. Samuel, Jr.
 Thorpe, Miss Virginia R.
 Throckmorton, Mrs.

A. D. Turcas
 Thursby, Sherman
 Tibbett, Lawrence
 Tidden, Miss Margaret
 Tiedemann, Henry F.
 Tiffany, Miss Jane Perry
 Tilney, Robert W.
 Timme, Dr. Walter
 Timolat, James G.
 Timolat, Louis K.
 Tinker, Mrs. Edward R.
 Tipper, Frederic W.
 Titley, Dr. Mildred S.
 Titus, Robert R.
 Todd, Mrs. Chrystal H.
 Todd, Russell W.
 Tompkins, Harold D.
 Topp, Miss Emily
 Torrey, Edward P.
 Townsend, Edward P.
 Townsend, James L.
 Townsend, Reginald T.
 Townsley, E. W.
 Towsley, Prentice W.
 Tozzer, Mrs. Isabel Kellers
 Traphagen, Hugh M.
 Trask, Mrs. Frederick K.
 Trask, Col. George F. D.
 Trattler, Charles S.
 Treuting, Frank L.
 Triller, Charles
 Trimble, Mrs. M. Brown
 Troster, Mrs. Oliver J.
 Trumbull, Walter
 Tuchman, Miss Lucy
 Tucker, Mrs. Carll, Jr.
 Tucker, Mrs. John
 Tuckerman, Mrs. Arthur
 Tully, Miss Alice
 Tunney, Mrs. Gene
 Turnbull, Mrs. Ramsay
 Turnbull, Richard
 Turnbull, Mrs. Richard
 Turner, Mrs. Huntington
 Turner, Mrs. J. Sturges
 Turner, John B.
 Turner, Dr. Kenneth B.
 Turner, Scott
 Tuttle, Carlisle B.
 Tweed, Harrison
 Tyler, Mrs. Victor Morris
 Tyrrel, Randolph E.

Underwood, Miss Elizabeth E.
 Valenti, Joseph
 Valentine, Miss Marguerite
 Van Buren, Ralph
 Vanderbilt, William H.
 Vanderlipp, W. T.
 Vanderpoel, Mrs. Floyd L.
 Van Gerbig, Barend
 Van Heukelom, Carel
 Van Ingen, Dr. Philip
 Van Kirk, Mrs. Florence M. F.
 Van Norden, Mrs. Margery L.
 Van Valey, Dr. Edwin G.
 Van Vleck, Howard A.
 Vassen, Mrs. Hedi
 Vassilatos, Dennis
 Vastola, Dr. Edward
 *Vaughan, Mrs. Henry Goodw.
 Veatch, Mrs. Caroline E.
 Velay, Mrs. Maxime
 Vicario, J. Meritt
 Vincent, Mrs. George E.
 Vishniac, Roman
 Vogeley, Mrs. W. Roebeling
 *Volk, Eberhardt
 Volk, Kurt H.
 Von Au, Mrs. Otto E.
 Von Bergen, William H.
 Von Eiff, Konrad
 von Hennig, Horst
 Von Vietinghoff, Dr. Karl
 Voorhees, Mrs. S. F.
 Vose, C. R.
 Wacker, Mrs. Arthur A.
 Waddell, Mrs. Chauncey
 Waddell, K. C.
 Wadsworth, Dyer
 Wagner, Louis C., Jr.
 Wagner, Oscar
 Wainwright, Daniel P.
 Wakefield, Bernard
 Wakeman, John
 Walker, Bradford H.
 Walker, Miss Elizabeth
 Walker, J. Philip
 Walker, Mrs. Samuel P.
 Walker, Samuel Sloan
 Walkinshaw, Dr. Lawrence F.
 Wallace, Charles J.
 Wallin, Miss Mary
 Walls, Mrs. Elizabeth
 Walmsley, Heru Ra

*Deceased

Walsh, Miss Hannah B.
 Walsh, James A.
 Walsh, Thomas J.
 Walther, Francis
 Walton, Harold L.
 Waltz, Anton F.
 Wang, Stephen
 Wangeman, Frank G.
 Warburg, David
 Warburg, Mrs. Felix M.
 Warburg, Gerald F.
 Ward, E. S.
 Ward, Sylvanus D.
 Ward, Dr. Wilbur
 Ward, William F.
 Wardwell, Miss Alice W.
 Wardwell, Allen
 Wardwell, Mrs. Edward R.
 Warfield, Ethelbert
 Warmack, Mrs. Robert N.
 Warner, Ira F.
 Warnshuis, Mrs. A. Livingston
 Warren, Gordon H.
 Warren, Miss Hope
 Washburn, Mrs. Frank B.
 Waterbury, Miss Florance
 Waterman, Mrs.
 Frederick W., III
 Waterman, Philip M.
 Waters, Mrs. F. S.
 Watkins, John B., 2nd
 Watson, Thomas J.
 Watts, Edward E., Jr.
 Wauchope, Capt. George M.
 Vay, Miss Ruth
 Wayne, Harold L.
 Webb, Vanderbilt
 Webb, Mrs. Vanderbilt
 Veber, Julius
 Webster, Dr. Jerome P.
 Veed, J. Spencer
 Veekes, Arthur D.
 Veems, F. Carrington
 Veems, Mrs. F. Carrington
 Veigert, Hugo
 Veil, Frank L.
 Veil, Dr. Henry L.
 Veil, Mrs. Sylvan E.
 Veil, Walter L.
 Veilbacher, Mrs. Estelle
 Weinberg, Mrs. Charles
 Weinberg, Dr. I.
 deceased
 Weinkauff, Mrs. H.
 Weinstock, Dr. Harry
 Weir, Miss Eleanor B.
 Weisl, Edwin L.
 Weisman, Dr. Abner I.
 Weismann, Harold A.
 Weissman, William Kent
 Welch, Francis C.
 Weld, Mrs. Edward M.
 Weld, Mrs. Philip B.
 Wellington, Franklin P.
 Welldon, Samuel A.
 Wentink, Mrs. J. G.
 Werner, Robert G.
 Wetmore, Miss Edith
 Wheeler, Mrs. John M.
 Wheeler, Mrs. John P.
 Whitaker, George W.
 White, Mrs. Alexander M., Jr.
 White, Harold T.
 White, Harold T., Jr.
 White, Richardson, Jr.
 White, Dr. Thomas J.
 Whitehouse, Sheldon
 Whitehouse, William F.
 Whitman, Gerald
 Whitman, William, Jr.
 Whitney, Edward A., Jr.
 Whitney, Mrs. George
 Whitney, Mrs. Howard F.
 Whitridge, Arnold
 Whittlesey, Melzar M.
 Wick, John M.
 Wiehe, Theodore C.
 Wienicke, Mrs. Kurt
 Wierum, Otto C.
 Wiese, Mrs. Caroline V. der W.
 Wiesel, Dr. Benjamin
 Wightman, Mrs. Gordon E.
 Wilder, Neil MacDonald
 Wilder, Mrs. Throop M.
 Wile, Edwin
 Wiley, Mrs. Alexander
 Wilkinson, Dr. Joseph B.
 Wilkinson, Mrs. Lawrence
 Willets, William P.
 Willey, Dr. Charles H.
 Williams, Ernest
 Williams, Miss Jane E.
 Williams, John S.
 Williams, Prof. Joseph L.
 Williams, Samuel D.
 Williams, Dr. Walter J.
 Williams, Dr. Ward
 Williams, Wheeler
 Williamson, Mrs. Edna Morse
 Williamson, Edward
 Wilmerding, Mrs. Lucius
 Wilner, Ellis H.
 Wilson, Horace H.
 Wilson, Miss Isabel
 Wilson, Kent H.
 Wilson, Orme
 Wilson, Mrs. Paul E.
 Wilson, Perry J.
 Wilson, R. Thornton
 Windisch, Richard P.
 Winer, Abraham Raphael
 Wing, Mrs. Faith Whitney
 Winkhaus, Mrs. John T.
 Winslow, Pearson
 Winston, Owen
 Winter, Dwight
 Witherspoon, Charles G.
 Wocel, Frank E., Jr.
 Wolf, Samuel
 Wolfe, Alan L.
 Wolfe, Arthur
 Wolfe, Henderson M.
 Wolfe, J. Albert
 Wolff, Mrs. J. D.
 Wolff, John L.
 Wolfson, George M.
 Wolman, Mrs. Cecil Clark
 Wood, Eric W.
 Wood, Francis Carter, Jr.
 Wood, Mrs. Turnbull
 Wood, Mrs. Willis D.
 Woodruff, Miss Helen M.
 Woodward, Cedric R.
 Woodward, Mrs. Julian L.
 Woodward, Mrs. William
 Woody, Tate
 Woolf, Mrs. Louis J.
 Woolley, John E.
 Woolley, Mrs. Knight
 Woolverton, Samuel
 Worcester, Wilfred J.
 Wormser, Felix E.
 Wormser, Mrs. Max
 Wortis, Dr. Bernard S.
 Wright, Solomon, Jr.
 Wulfig, F. W.
 Wurm, Dr. Carl, Jr.

Wyeth, Marion Sims
Yancey, Rev. P. H.
Ylla
Young, Benjamin F.
Young, Mrs. Roger A.
Yunker, Herman

Zabriskie, Miss Ethel
Zabriskie, George A.
Zachry, Stephen
Zahn, Philip
Zepp, Dr. C. P.
Ziegler, William, Jr.

Zinsser, Miss Joyce K.
Zinsser, Rudolph
Zinsser, William H.
Zipser, Samuel S.
Zive, Simon
Zurmuhlen, Frederick H

SUMMARY OF MEMBERSHIP

Benefactors	7
Founders in Perpetuity.....	13
Founders	14
Associate Founders	8
Patrons	30
Life Members	369
Contributing Members	315
Annual Members	2,619
Honorary Members	5
Fellows	87
Research Associates	3
Corresponding Members	10
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(Total)	3,480

Corrected to January 1, 1950

BY-LAWS OF THE NEW YORK ZOOLOGICAL SOCIETY

ARTICLE I • MEMBERS

SECTION 1. The present members and such others as hereafter shall become members in accordance with these by-laws shall be the members of this Society.

SEC. 2. Annual, contributing and school members shall be elected by the Board or Executive Committee and, upon election, shall qualify for such membership by payment of dues for the first year commencing on the date of their election. No organizations other than schools shall be eligible as such for Society membership.

SEC. 3. Annual dues of annual members shall be \$10, and of contributing and school members \$25. Any person who shall fail to qualify within three months after his election shall be deemed to have declined his election.

SEC. 4. Any member who shall fail to pay his annual dues within three months after notice that they have become due and demand therefor, shall cease to be a member of the Society. He may, however, be reinstated by the Board or Executive Committee for good cause shown.

SEC. 5. Any person who shall have donated to the Society, in the aggregate, cash or the equivalent in value of any of the following amounts shall be eligible for election, by the Board or Executive Committee, to the class of membership appearing opposite such amount:

\$ 200.00	Life Membership	\$ 5,000.00	Founder
\$1,000.00	Patron	\$10,000.00	Founder in Perpetuity
\$2,500.00	Associate Founder	\$25,000.00	Benefactor

An annual member who has paid dues for five consecutive years and a contributing or school member who has paid dues for three consecutive years, may thereafter, at any time, upon payment of the difference between the aggregate dues already paid and \$200, but in no case less than \$100, be elected a Life Member. Upon the death of a trustee, his widow shall be eligible for election, by the Board or Executive Committee, to Life Membership.

SEC. 6. The Board or Executive Committee may elect to membership in the following classes persons who, in their judgment, have achieved the qualifications hereinafter specified:

Fellows:—Persons of marked scientific achievement.

Honorary Members:—Persons who have rendered distinguished services in the science of zoology or natural history.

Corresponding Members:—Persons who have rendered marked services to the Society through correspondence.

SEC. 7. All but annual, contributing and school members shall be exempt from payment of annual dues.

SEC. 8. Benefactors and Founders in Perpetuity shall have the power to designate their respective successors, who shall thereupon be entitled to all the rights and privileges of their predecessors, including the right in turn to desig-

nate their successors. Such designation shall be in writing indorsed or attached to the certificate of membership or by last will and testament.

ARTICLE II • PRIVILEGES OF MEMBERS

SECTION 1. Each annual, contributing and school member shall be entitled to a member's ticket, ten tickets of admission to the Zoological Park and Aquarium on pay days, a copy of the annual report, a copy of the official periodical publication of the Society, and shall be entitled also to the privileges of the Library and Administration Building at the Zoological Park.

SEC. 2. Life Members shall be entitled to all the privileges of annual members and also to ten additional tickets of admission to the Zoological Park and Aquarium on pay days.

SEC. 3. Benefactors, Founders in Perpetuity, Founders, Associate Founders and Patrons shall be entitled to all the privileges of Life Members and also to receive the Society's scientific publication "Zoologica."

SEC. 4. A member's ticket, issued annually, shall admit the member and his immediate family to the Zoological Park and Aquarium on pay days and to lectures and special exhibitions. It may be used by the member's immediate family.

SEC. 5. Each member, other than a member elected pursuant to Article I, Section 6, shall be entitled to one vote at each meeting of the Society.

SEC. 6. Any member who shall fail to comply with the provisions of these by-laws may be suspended from the privileges of membership or dropped from the rolls of the Society, by a majority vote of those present at a duly constituted meeting of the Board or Executive Committee.

ARTICLE III • MEETINGS OF THE SOCIETY

SECTION 1. The Annual Meeting of the Society shall be held on the first Tuesday in March in each year, or on such day thereafter and at such time and place as may be designated by the Board or Executive Committee.

SEC. 2. Special Meetings of the Society may be called upon order of the President or Chairman of the Executive Committee or on the written request of ten Trustees delivered to the Secretary.

SEC. 3. Notice of each annual or special meeting of the Society, stating the time, place and purpose thereof, shall be mailed, at least ten days before an annual and three days before a special meeting, to each member at his address last recorded with the Secretary.

SEC. 4. At all meetings of the Society twenty members shall constitute a quorum.

ARTICLE IV • BOARD OF TRUSTEES

SECTION 1. The property, affairs and business of the Society shall be managed and controlled by a Board of Trustees consisting of thirty-six members

divided into three equal classes, together with the Mayor and the Commissioner of Parks of the City of New York who shall be members *ex officio* of the Board. Each class of elected trustees shall hold office for three years and until its successors are elected. The term of office of one class shall expire each year and its successor shall be elected at the annual meeting of the Society.

SEC. 2. No person shall be eligible for election to the Board unless he shall be either a Benefactor, Founder in Perpetuity, Founder, Associate Founder, Patron or Life Member and, excepting to fill vacancies, unless his name shall have been posted as a candidate by the Nominating Committee or by not less than ten members in writing in a conspicuous place in the office of the Society not less than ten days before the annual meeting.

SEC. 3. Vacancies in the Board may be filled for the unexpired term by the Board or Executive Committee at any regular or special meeting, by ballot, by a majority vote of the members present; but no person shall be eligible for election to fill a vacancy unless he shall have been nominated at a prior or special meeting of the Board or Executive Committee.

SEC. 4. The Board shall hold an annual meeting in December in each year, on a date and at a time and place designated by the Board or Executive Committee. Other meetings of the Board may be called upon order of the President or Chairman of the Executive Committee or at the written request of five Trustees delivered to the Secretary. Twelve Trustees shall constitute a quorum.

SEC. 5. Notice of each meeting of the Board shall be mailed to each Trustee at least seven days before the annual meeting and at least three days before any other meeting.

SEC. 6. A Trustee who shall fail to attend three consecutive meetings of the Board, without being excused by the Board, shall be deemed to have resigned as a Trustee.

SEC. 7. The Board at its annual meeting in each year shall appoint three standing committees — an Executive Committee, a Finance Committee and an Auditing Committee — each of which shall serve for one year, or until its successors are appointed. The Board or Executive Committee may appoint such other Committees and delegate to them such powers as they may deem advisable or necessary. The President shall designate the Chairman of each committee.

ARTICLE V • OFFICERS

SECTION 1. The Board of Trustees at its Annual Meeting in each year shall elect a President, a First Vice President, a Second Vice President, a Treasurer and a Secretary from among the Trustees. The said officers shall hold office respectively for the ensuing year and until their successors are elected. Any vacancy for an unexpired term may be filled by the Board or Executive Committee.

SEC. 2. The President shall preside at all meetings of the Society and of the Board, exercise general supervision of the affairs of the Society, from time to time call attention of the Board to such subjects as in his opinion require consideration and shall exercise the usual functions pertaining to his office. He shall be a member *ex officio* of all standing committees.

SEC. 3. The Vice Presidents, in order of seniority, in case of death, absence, resignation or disability of the President shall perform his duties and exercise his powers.

SEC. 4. The Treasurer shall collect, receive and have custody of the funds and securities of the Society subject to the order of the Board or Executive Committee and shall keep all funds of the Society on deposit with a bank or trust company approved by the Board or Executive Committee. He shall pay all bills and appropriations as ordered by the Board or Executive Committee, shall keep regular and correct accounts and shall submit reports to the Society at its Annual Meeting, to the Board at all Regular Meetings and to the Executive Committee at each meeting. He shall be a member *ex officio* of the Executive Committee. The books of account of the Society shall be open at all times to the inspection of the Trustees and the Executive, Finance and Auditing Committees. The fiscal year of the Society shall be the calendar year.

SEC. 5. The Secretary, unless otherwise ordered by the Board or Executive Committee, shall cause notices to be issued of all meetings of the Society, the Board and the Executive Committee, attend all such meetings and keep the minutes thereof. Together with the President or a Vice President he shall execute all contracts and instruments on behalf of the Society, and shall affix the seal of the Society when authorized to do so by the Board or Executive Committee. He shall conduct the correspondence of the Society, have custody of the seal, archives and books, other than books of account, and perform the usual duties pertaining to his office and such other duties as the Board or Executive Committee may direct. He shall be a member *ex officio* of the Executive Committee.

SEC. 6. The Board or Executive Committee may appoint an Assistant Treasurer or an Assistant Secretary and such other officers or officials as may be deemed necessary to serve at the pleasure of the Board or Executive Committee, and may define their respective duties. A bank or trust company organized under the laws of New York and having its principal place of business in New York City may be appointed Assistant Treasurer and may be made depository of the funds and custodian of the securities and investments of the Society upon such terms and with such powers as may be delegated to it by the Board or Executive Committee.

ARTICLE VI • COMMITTEES

SECTION 1. *Executive Committee* — This Committee shall consist of eight Trustees, together with the President, Treasurer and Secretary as members *ex officio*. Vacancies shall be filled by the Board or by the Committee itself.

In the interim between meetings of the Board, the Executive Committee shall manage and control the property, business and affairs of the Society and exercise all the powers of the Board to the extent not delegated to other Committees or contrary to law. It shall report at each regular meeting of the Board.

Regular meetings of the Executive Committee shall be held on the third Tuesday in each month, unless otherwise ordered by the Chairman, at such time and place as shall be fixed by the Chairman. Special meetings may be called upon order of the Chairman or at the written request of three members of the Committee delivered to the Secretary. Four members including the Chairman shall constitute a quorum.

The Executive Committee shall appoint each year a Nominating Committee

which shall hold office for one year and until its successors are appointed.

The Executive Committee shall have power to fix the salaries of the officers and employees of the Society.

SEC. 2. Finance Committee — This Committee shall consist of not less than three Trustees and the Treasurer as members *ex officio*. Vacancies therein shall be filled by the Board or Executive Committee.

The Finance Committee shall have power to sell securities and other investments belonging to the Society and to reinvest proceeds of sale and invest any other funds of the Society available for investment, in such securities or investments as it may deem wise. It shall report quarterly to the Executive Committee all purchases and sales of securities and investments made by it. It may submit to the Board or Executive Committee its recommendations with regard to sales or purchases of securities or other investments.

Notwithstanding the power hereby conferred, the Board or Executive Committee may, at any time, direct the sale of any securities and investments held by the Society, or direct the reinvestment of any proceeds of sale or investment of other funds of the Society available for investment in such securities or investments as it may specify.

All transfers and assignments of the securities registered or standing in the name of the Society shall be executed under the seal of the Society by the President or a Vice President, together with the Secretary or Treasurer.

The report of the Chairman of the Finance Committee shall be sufficient authority to the Chairman of the Executive Committee for approving drafts for purchases of securities or investments.

SEC. 3. Auditing Committee — This Committee shall consist of three members, other than members elected pursuant to Article I, Section 6, together with the President and the Secretary as members *ex officio*. Vacancies therein shall be filled by the Board or Executive Committee.

The Auditing Committee shall cause the accounts of the Treasurer and any other accounts of the Society to be audited and certified annually, or as often as it deems advisable, by a certified public accountant of its selection and shall report to the Board at its annual meeting. It shall cause the annual statement of the Treasurer to be audited and certified by such certified public accountant before it is submitted to the Board, and shall annually, or as often as it deems advisable, examine and verify the securities and other investments belonging to the Society.

SEC. 4. Nominating Committee — This Committee shall be composed of three members other than Trustees and members elected pursuant to Article I, Section 6. Vacancies therein shall be filled by the Executive Committee. This Committee shall select twelve candidates, to succeed the outgoing class of Trustees, to be voted upon at the ensuing annual meeting. Such candidates shall be selected from among the Benefactors, Founders in Perpetuity, Founders, Associate Founders, Patrons and Life Members of the Society. The names of such candidates shall be posted in a conspicuous place in the office of the Society at least ten days before the annual meeting.

ARTICLE VII • AMENDMENTS

SECTION 1. These By-Laws may be amended, either by change or repeal of any provision or the adoption of new provisions, at any meeting of the Board by majority vote of the Trustees present, provided such proposed amendment is set forth in full in the notice of such meeting.

